



The So-Called “Velasco Map”: A Case of Forgery?

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Abstract

This article examines a well-known map of the northeastern United States and southeastern Canada allegedly made in or around 1610. The map was uncovered in the Spanish Archives at Simancas in 1887. Supposedly, it is a copy of an anonymous English map, which was sent to King Phillip III of Spain by the Spanish ambassador to London, Don Alonzo de Velasco. This article raises the possibility that the map may actually be a nineteenth-century forgery. The map is based primarily on information found on early seventeenth-century maps, most of which were not published in 1610, although it is possible that manuscript copies of these maps might have been available as early as 1610. The overall geographic framework of the map seems to be improbably accurate for its supposed date of creation. The map contains numerous oddities, and many features on the map do not appear on other maps made in the early seventeenth century. Overall it seems anachronistic and it stands in isolation from other maps made around 1600. Although no single feature on the map proves beyond a doubt that it is a forgery, the overall weight of the evidence makes it seem highly probable that it is a fake. Tests on the paper, pigment, and handwriting of the map should be made to prove conclusively whether or not it is a forgery.

Keywords: Don Alonzo de Velasco; Samuel de Champlain; exploration; forgeries; frauds; fakes; maps; cartography; seventeenth century; northeastern states; Canada

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Introduction

The so-called “Velasco Map” (Figure 1) is widely accepted as an authentic landmark in exploration and mapping of the American Northeast. This map was allegedly drawn around 1610 by an anonymous English cartographer. The only existing copy of the map was supposedly sent to Spain by the Spanish Ambassador to the British court, one Don Alonzo de Velasco, whose name has rather arbitrarily been attached to the map for identification purposes. It apparently reposed for about 275 years in the Spanish archives at Simancas until it was discovered by the American historian Alexander Brown in 1887. Brown published the map and his commentary in *The Genesis of the United States* (1890). Whatever else may be said about it, the Velasco Map presents a remarkably complete and accurate picture of the state of European geographical knowledge of the Northeastern United States and Southeastern Canada at the end of the first decade of the seventeenth century.^[1]

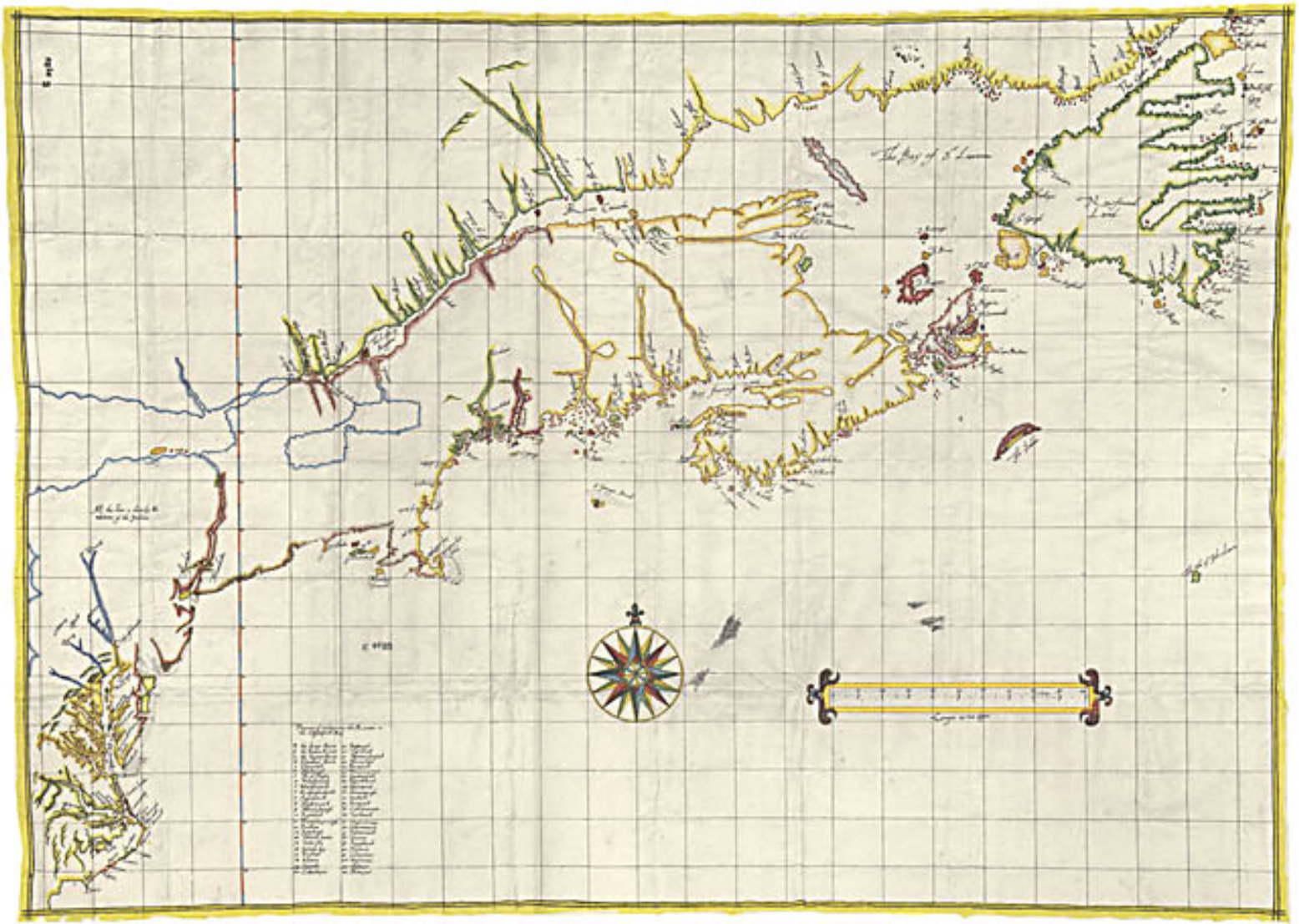


Figure 1. The Velasco Map.

Source: Stokes, *Iconography of Manhattan Island*.

High resolution image available at <http://www.she-philosopher.com/gallery/1610mapC1.html>

From the very beginning, there have been doubts concerning the authenticity of the Velasco Map. It is undated and its author is unknown. What perhaps makes it more suspect than anything else is its uncanny accuracy: it seems almost too good to be true. It appears to resemble a modern map of the area more closely than anything else produced in the first half of the seventeenth century. As early as 1892, Samuel Adams Drake observed, “it is entirely too good for the state of discovery at that early period of the seventeenth century—far better than either Champlain’s or Smith’s—and therefore argues a deliberate and painstaking survey, rather than a hasty one. The trend and shaping of the coast lines would do no discredit to a much later time.”^[2]

Alexander Brown explained at length why he thought the map was authentic, and speculated on its authorship.^[3] A few years later, the redoubtable Isaac Newton Stokes Phelps examined the original map at Simancas, wrote a detailed analysis of it, and defended its authenticity.^[4] The authority and persuasiveness of these two scholars largely put an end to arguments about the possibility of its being a forgery.^[5] In recent decades, the map has been widely reproduced without much questioning of its authenticity, and it has become established in the minds of many as providing a reliable picture of European knowledge of what is now the northeastern United States and eastern Canada as of 1610.^[6] Historians and other scholars have made considerable use of the map as a source of

evidence. It has been cited by as an example of the use of information from American Indian sources in colonial-era maps; it has been noted as the first map to name Georges Bank; and it has been used to help interpret other sources on English voyages and settlements in New England between 1600 and 1610.^[7] The only note of questioning concerning the map's authenticity I have been able to find in the recent literature comes from Schwartz and Ehrenberg, who quietly observe: "*If dating of the map is correct* [my italics], Virginia and Chesapeake Bay are shown prior to John Smith's Map of Virginia...."^[8] Recently, there was some discussion about the authenticity of the Velasco Map on the listserv MapHist, which stimulated the writing of this article.^[9]

Forgeries of early manuscript maps are uncommon, but some examples exist. For reasons that will be presented below, if the Velasco Map is a fake or a forgery^[10], it would have almost certainly have been created within a few decades before its discovery in 1887. There was a widespread interest in colonial American history in the last half of the nineteenth century, and the forgery of early colonial documents seems to have been a part of this trend. In addition to maps, a number of phony colonial "memoirs" were produced in the decades around 1900.^[11]

The purpose of this essay is to raise anew the question of the map's authenticity. The arguments in its favor made by Brown and Stokes will be reexamined. In addition, the large numbers of possible anachronisms and anomalies on the map will be reviewed. Place names and their origins will be reconsidered. The map's geodetic framework and projection will be examined. Finally, an attempt will be made to arrive at a balanced assessment of the possibility of the map being a forgery.

Physical and Circumstantial Evidence for the Authenticity of the Velasco Map

In my view, the strongest evidence for the authenticity of the Velasco Map comes not from what is on the map itself, but rather from the paper on which it is drawn, and from the place of its discovery.

The Velasco Map was unquestionably found in the Spanish archives at Simancas, and it still reposes there today. According to Brown, it was found together with an encrypted letter describing English activities in Virginia. Brown himself apparently did not examine the original map, and the circumstances of its discovery are somewhat mysterious.^[12] He relied on certified copies of the map and the accompanying document. In the documentation Brown received from the Spanish archives, the map seems to have been described as being physically enclosed in the letter.^[13] The final sentence of the letter (in the translation used by Brown) reads: "*This King sent last year a surveyor to survey that Province, and he returned here about three months ago and presented to him [King James] a plan or map of all that he could discover, a copy of which I send Y. M. [Your Majesty]....*"^[14] Brown assumed that the map is the same as the one referred to in the letter. This is a reasonable assumption, but its truth is by no means certain, and it is conceivable that the letter is also a forgery. Two other problems come to mind with Brown's interpretation of this passage. First, the "surveyor" could not have made a detailed survey of the entire area depicted on the map in the course of a single year. For reasons that will be presented below, this map had to be based on a number of independent surveys, which would have been brought together by its compiler(s). This task could have been performed in London, but not in North America at that time. Also, the letter that Velasco sent to King Phillip III focuses on activities in the Chesapeake Bay area, which makes one wonder whether the map referred to in the letter might not have been limited to that area—it might have more plausibly resembled the "Zuñiga Chart," which Velasco's predecessor as Spanish ambassador also sent back to Spain, or Robert Tindall's map of Virginia.^[15] Be that as it may, the fact that the map was found in the Spanish archives together with related documentation is a strong argument in favor of its authenticity. I will present the case that the map might be a nineteenth-century forgery, but it seems a bit of a stretch to suppose that a

forger (who would probably have been an American) could have introduced the map (and possibly the accompanying letter) into the Spanish archives without the fraud being detected.

The strongest single piece of evidence for the authenticity of the Velasco Map comes from Stokes, who made an independent examination of it at Simancas. Stokes found that the map was made of four sheets of paper pasted together. The paper bears a water mark, which he describes as follows: “The water-mark in the paper is a bunch of grapes and the name P. Quemet. Both details are illustrated by C. M. Briquet in *Les Filigranes*, Paris 1907, Vol. IV, No. 13216, where the fact is established that this paper was used from 1604 to 1611 in Narbonne.”[\[16\]](#) Although Stokes was not immune from mistakes in scholarly judgment, it is hard to believe that he could have been in error about something like this. Of course, a forger could have found four sheets of early seventeenth-century paper. This seems implausible, but it would not be the first time that a forged map was drawn on antique paper or parchment.[\[17\]](#)

The Apparent Anachronism of the Velasco Map—Overview

The authenticity of the Velasco Map remains questionable—in spite of the weighty physical evidence presented above—because of its striking anachronism. My own reaction on first seeing the map many years ago, when I did not think of questioning its authenticity, was amazement that such a good outline of the coast could have been drawn at that early date. It is only a small step from this reaction to Drake’s conclusion that “it is entirely too good for the state of discovery at that early period of the seventeenth century.” Most people who have commented on the map have used words like “remarkable” to describe it—as indeed it is, regardless of whether or not it is authentic.

Just how remarkable the Velasco Map is becomes apparent when it is compared with other maps of the American Northeast produced prior to 1650. To make my point, I am presenting here small copies of the two early seventeenth-century maps that most closely resemble the Velasco Map. These are Champlain’s 1612 Map of New France (Figure 2),[\[18\]](#) and the so-called “Adriaen Block Chart” (Figure 3).[\[19\]](#) To these maps might be added the “Virginia Company” chart of North America,[\[20\]](#) and Henry Briggs 1625 map of “The North Part of America.”[\[21\]](#) It is difficult to compare these maps using small facsimiles, and interested readers will want to consult more detailed copies in print or online. Copies of these maps are readily available, and are cited in the endnotes of this article. Additional relevant maps include Champlain’s 1607 map of New England, his 1613 and 1632 maps of New France, the maps of Virginia and New England made by (or at least drawn for) John Smith, and several other maps mentioned in the text of this article and listed in Appendix D.



Figure 2. Champlain's 1612 Map of New France.

Bibliothèque nationale du Québec

High-resolution image available at: <http://www4.bnquebec.ca/cargo/accueil.htm>.



Figure 3. Adriaen Block Chart of 1614.

Copy of Nineteenth-Century Facsimile from American Geographical Society Library,
University of Wisconsin Milwaukee.

While there are numerous similarities between the Velasco Map and the maps listed above, it is remarkable how much more accurate by modern standards the Velasco Map appears than any of them. How could an unknown English cartographer in the early seventeenth century have produced such a “remarkable” map? This question becomes more pointed when one compares this map in detail with the maps of others, especially Champlain. Champlain was an expert cartographer by early seventeenth-century standards. He spent years

surveying the coast of New England, the Bay of Fundy, and the St. Lawrence River. Nonetheless, his maps of some of these areas present a more distorted rendition of the coast than the Velasco Map. How could this be?

This overview raises many questions, but it does not provide solid answers. Such a “gut reaction” of surprise or skepticism calls for a careful analysis of the Velasco Map, and for a more systematic comparison between it and other maps produced at roughly the same time. These comparisons I will attempt to provide, at least in part, in the remainder of this article.

The Geodetic Framework of the Velasco Map

The Velasco Map covers a huge geographic area. It stretches (south to north) from Cape Lookout in southern North Carolina to Belle Isle just off the northern tip of Newfoundland. Going from east to west, it reaches from Cape Race (the southeastern tip of Newfoundland) to Lake Ontario. Such an immense area with an unusually convoluted stretch of coastline could hardly have been surveyed by a single expedition in the seventeenth century. We will assume (as have all other authors who have analyzed the map) that it was compiled from a number of individual surveys. A major problem for anyone putting together a map in this fashion would have been maintaining some kind of geodetic control. The surveys on which this map was based were certain to have been made at different scales. Given the technology available at the time, measurements of latitude would have been few and far between, and often extremely inaccurate. There was no reliable way of measuring longitude at sea, and even astronomical measurements of longitude made on land were difficult and prone to spectacular errors. Under these circumstances, it would have been nearly impossible to put together an accurate chart of the coastline of such a large area at a uniform scale. For these reasons, much can be learned by examining the geodetic framework of the map, and by comparing the location of specific features on it with both modern maps and with other early seventeenth-century maps.

A glance at the Velasco Map reveals a simple grid of squares, such as might be used by someone copying a map. However, a more careful examination shows that the grid is based on latitudes and what might or might not be lines of longitude. There is a scale of latitudes on the west side of the map just to the right of the Hudson River, and the length of each square is given as exactly one degree. The map also possesses a bar scale, which tells us that the width of one of these squares is twenty leagues. Some of this is quite in accord with early seventeenth-century English mapping conventions. The English league at that time consisted of 3 miles, and a degree was usually set at 60 miles. This is straightforward enough, but the length of the mile was not standardized at that time, and it is quite likely that the miles would have been 5000 foot “London miles” rather statute miles.^[22] Assuming that statute miles were used, each square on the Velasco Map measures one degree of longitude or 60 miles on a side. If London miles were used, the squares would have been 57 miles wide. Both of these figures are significantly shorter than the length of the modern degree of latitude, which is approximately 69.12 statute miles, and also somewhat shorter than the degree based on the Spanish league, which was widely used on the continent at the time.^[23] On top of everything else, after the 1630s the English began to measure their leagues using 6000 foot “nautical miles,” and if the Velasco Map is a forgery, it is likely that its author assumed that this was the standard being used around 1610. This would have set the length of a degree much closer to the modern figure (about 68.4 miles).

It is not so clear how the maker of the Velasco Map approached the problem of measuring longitude. There are no longitudinal marks on the map, and there is no indication of a prime meridian. Such omissions were not uncommon on early seventeenth century maps, although longitudinal scales can be found on many maps of that time, including several of Champlain’s maps, and on Smith’s map of New England. What is really peculiar about the projection of the Velasco Map is the grid of squares that sets the length of a degree of latitude exactly equal to

a degree of longitude. In actuality, the convergence of longitudinal lines towards the pole means that the latitude-longitude lines form progressively narrower ellipsoidal trapezoids as one moves north from the equator. Thus, at 35 degrees, the length of a modern degree of longitude is 56.72 miles; at 52 degrees it is only 42.67 degrees.^[24] Around 45 degrees, a degree of longitude is about 25 percent shorter than a degree of latitude. This seems to make the Velasco Map a very primitive and inaccurate version of a type of equirectangular projection known as a “plain chart” (or “plane chart”). Equirectangular projections were still common on English maps around 1600, and were frequently used on regional maps. But by that time virtually everybody involved with map making was aware of the convergence of the lines of longitude, and most regional plain charts partially corrected for it by shortening the lines of latitude—thereby producing longitude-latitude grids made up of elongated rectangles. Even this type of projection had serious problems, especially in dealing with angular distances, and it was beginning to come under fire from cartographers like Edward Wright, who in 1599 had published a “Chart of the World on Mercators Projection.”^[25] By 1610 the most advanced English practitioners were already drawing maps that showed lines of longitude converging towards the north, as also did Champlain on his map of New France made in 1632.^[26] Given that the Velasco Map was produced for the British court and was “state of the art” in terms of the knowledge it conveyed, it is astonishing that no better effort was made to deal with the problem of longitude, or to adopt a more sophisticated projection. The results of using this projection, as will be seen in further detail below, are that east-west distances are greatly exaggerated, and that true directions can be only approximately established. The lack of rhumb lines is also somewhat unusual on a carefully drawn nautical chart of this period. It remains to consider whether the distribution of data on the map reflects the actual use of the projection apparently indicated by the grid.

At least the presence of a scale and latitudinal degree marks on the Velasco Map makes it possible to measure the latitude of everything on it. These measurements reveal, not surprisingly, that the Velasco Map was quite accurate by seventeenth-century standards. Most of the latitudes are within 20 minutes of modern readings. The range is from 3 minutes (New York Harbor, Cape Gaspé) to 39 minutes (Tadoussac, Cape Hatteras). The inaccuracy of the reading for Cape Hatteras is somewhat surprising, given that the map pays so much attention to the area around Virginia, and that the reading for nearby Cape Lookout is off by only 6 minutes. There seems to be no consistent pattern in the variations, and the readings, although good, are not outside of the range of what could be expected in the early seventeenth century. They are similar to the range of errors made by Champlain.^[27]

Although reading the latitudes on the Velasco Map is straightforward, the same cannot be said for the reading of longitudes and longitudinal distances. With the aid of the scale and the grid, we can also try to measure approximate longitudes and calculate distances on the map—but these operations are very problematic. To measure longitudes, I have set the easternmost line of longitude on the Velasco Map, which runs through Bell Island off the coast of Newfoundland, as equal to its modern Greenwich equivalent, and tentatively calibrated the other longitudes. As we have seen, the scale of the map clearly indicates that one degree of longitude anywhere on the map equals 20 leagues (exactly the same as a degree of latitude). Assuming that the map used latitudinal degrees equal to degrees of 60 miles (instead of the modern figure of 69.12), one would expect longitudinal locations to be progressively displaced to the east across the map. If the 5000 foot “London mile” was used, this displacement would have been even greater. On the other hand, the use of the square equirectangular projection would have made the longitudinal degrees much longer than they should be—roughly 25% at the center of the map, thereby more than canceling out the eastwards displacement. Since we do not know for certain what the mapmaker did, we can only use this jumble of conflicting data to make intelligent guesses based on several possibilities. The resulting figures can be compared with the values on modern maps and those given on other early seventeenth century maps. These comparisons provide some clues about when the map was made, and how it was made.

The longitude readings on the Velasco Map are peculiar and often suspiciously accurate. When estimated by using the grid on the map, most of the longitudinal readings are phenomenally good (see Appendix A). The only seriously inaccurate longitudinal reading is for Cape Race, which is displaced more than three degrees to the west. This displacement is mostly the result of the peculiar clockwise rotation of Newfoundland in comparison with the rest of the map, which will be discussed below. But Cape Cod differs from the modern reading by only 23 minutes; Montreal is off by 14 minutes; and the site of the modern city of Kingston, Ontario, is off by only 25 minutes. There are greater inaccuracies in the southern portion of the map. New York Harbor falls two degrees and 26 minutes to the west; Cape Lookout (confusingly called Cape Fear on this and some other early maps), which is the western most named site on the map, falls two degrees and 17 minutes beyond the modern reading. These errors on the southern part of the map are caused mostly by the displacement of the coast to the west because of an overestimation of the distance between Cape Cod and New York Harbor.

What is one to make of these longitudinal readings? As far as I am concerned the consistently accurate readings for the coast of New England and the St. Lawrence River Valley strongly suggest fraud. They are much more accurate than those produced by Champlain, who is the only person who had carefully surveyed much of this area. Consider that there was no way at that time to measure longitude at sea except by estimating the speed of the ship (“dead reckoning”), which is notoriously inaccurate. In theory, accurate longitudes could be taken on land by astronomical means, and some surprisingly good estimates were made based on the inconsistently faulty method of magnetic variation of the compass (a method used by Champlain and some of his English contemporaries). Although good results were occasionally obtained by these methods, even the best surveyors were inconsistent, and many of the readings recorded on seventeenth-century maps are woefully inaccurate. In the seventeenth century, it would have required divine intervention (in the form of a miracle) for the compiler of the Velasco Map to have obtained longitude readings as precise as these. On top of this, these readings do not make sense when compared with the actual mileages suggested by the scale of the map. This can be seen very clearly in the case of some of the longer longitudinal measurements. Thus, the longitudinal distance from the east end of Sable Island to the east shore of Lake Ontario is almost exactly 16 degrees; on a modern map, the distance is also almost exactly 16 degrees. However, because the Velasco Map ignores the convergence of the meridians, it significantly overstates the mileage distance between these two locations. The distance covered by 16 degrees on the Velasco Map could be anywhere between 1106 and 912 modern miles, with the most probable figures being 960 or 912 (if the map is authentic). The actual distance on the ground is about 797 miles. The mathematics behind these figures is explained in footnote 28.[\[28\]](#)

All of this strongly suggests that the longitudinal positions were based on information derived from a modern (i.e. post 1850) map. The maker of the map was cognizant of the distortions created by using a square grid, and compensated by exaggerating the longitudinal mileage distances. Indeed, the appearance of the map at least approximates what one would expect from a square-grided equirectangular projection: in comparison with modern maps of the area, the Velasco Map appears to be flattened and stretched horizontally, especially towards the north. Commenting on the peculiar projection of the Velasco Map, Conrad Heidenreich writes: “I feel that any early 17th century cartographer who could put this map together from a number of other maps must have known how to adjust the spacing of his longitudes. The grid we see on the Velasco Map of squares is very rare and reeks of fraud by an historian who does not know map projections or basic math.”[\[29\]](#) While I think Heidenreich may underestimate the knowledge of projections on the part of the person who made the map, it certainly does appear that it “reeks of fraud.” In 1610 such accurate measurements of longitudinal positions in North America were simply unavailable, and the longitudinal distances do not correlate with those on other early seventeenth-century maps, which tend to underestimate distances in unsurveyed areas rather than overestimate them. All of this is in addition to the fact that even in 1610 any respectable mapmaker would have avoided this type of projection

because of the way it distorts both distances and directions. Why a forger would have chosen to use this unusual and obsolete projection is a mystery to me: if he knew enough to stretch out his distances to compensate for the square grid, he must have had the knowledge to adopt a more accurate and plausible equilateral projection with shorter degrees on the east-west scale.

The remarkable accuracy of these measurements of longitude and latitude is partially reflected in the pattern of straight-line distances on the map (see Appendix B). Even given the tendency of the Velasco Map to exaggerate longitudinal distances, some of the measurements are so accurate as to be almost unbelievable. Assuming that each square on the map grid represents 60 statute miles, the distance from Belle Isle to Cape Lookout, which is 1603 miles on a modern map, is 1680 miles on the Velasco Map. The distance from Belle Isle to the site of Kingston, Ontario, is 1175 (modern) compared to 1272 (Velasco). These are the longest distances that can be measured on the map, and they are among the most accurate. If the author of the map was using “London miles,” these figures would be even closer (multiply the Velasco figures by .95). This high accuracy for long distances is the opposite of what one would expect. Given the difficulty of measuring longitudes at the time and the short degree used on the map, one would expect the longest distances to be the least precise. It is a particularly remarkable coincidence that the distances for Kingston and the eastern shore of Lake Ontario work out so precisely, since no European had even set foot in the area at the time the Velasco Map was made. This amazing precision does not hold up as well over shorter distances. Thus, the modern distance from Tadoussac to Montreal is 280 miles; on the Velasco Map it is 360 miles. The distance from Montreal to Kingston is 180 (modern) versus 144 for the Velasco Map. The errors in these distances roughly balance out, which makes the total distance between Tadoussac and Kingston approximately the same as the modern figure. Equally astonishing—but maybe not so surprising, given what we have seen of the longitude and latitude figures for the Velasco Map—over long distances the east-west (longitudinal) distances are more accurate than the north-south (latitudinal) distances. This is particularly noticeable along the east coast of the United States, where Velasco’s distances are consistently shorter than the modern figures, especially south of New York. This further confirms that the maker of the Velasco Map used a modern map to establish the basic geodetic framework, especially for longitudes. This essentially modern framework would have then been distorted to accommodate the obvious discrepancy with Champlain’s mapping of the St. Lawrence River, and to make other changes to make the map look more like an authentic early seventeenth-century production. If this analysis is at all correct, the map is a nineteenth-century forgery.

A different perspective can be obtained by superimposing the Velasco Map on top of a modern map. Figure 4 shows a tracing of the Velasco Map on top of a computer generated equirectangular projection. After experimenting with different map projections, I found that the Velasco Map most closely matches a modern equirectangular projection (which my GIS program calls a “raw latitude and longitude projection”). This confirms that the geodetic framework of the Velasco Map is what it seems to be—an equidistant equirectangular projection or square gridded “plain chart.” Although the Velasco Map has been shifted slightly to line up with the modern map at the tip of Cape Cod, no “stretching” or other alteration of the image has been performed. On this figure, there is a reasonably close match between the longitudes and latitudes on the Velasco Map and those on the modern map, but considerable differences can be found in many areas. The discrepancies do not fall into a consistent pattern. The southeast coast of Newfoundland on the Velasco Map is displaced far to the west and Newfoundland as a whole is rotated clockwise. A glance at Newfoundland shows why the longitudinal reading for Cape Race is the least accurate on the map. A similar rotation affects Anticosti Island. Cape Breton Island and the northern part of the west coast of Nova Scotia are displaced to the northwest, but the west shore of the Gulf of St. Lawrence is displaced to the east. The Bay of Fundy and the coast of New England as far south as Cape Cod are in approximately the correct position. The St. Lawrence River and Lake Ontario also line up quite well, although the whole area is displaced somewhat to the east and the south. The coast of North America south and west of

Cape Cod is displaced both to the north and the west. Some of these displacements reflect the underestimation of the distance between the coast of New England and the St. Lawrence River, which is characteristic of many early seventeenth-century maps. On the Velasco Map the north-south distances between Cape Cod and Cape Lookout are also underestimated, and the coastline between Buzzard's Bay and New York Harbor is displaced to the north.

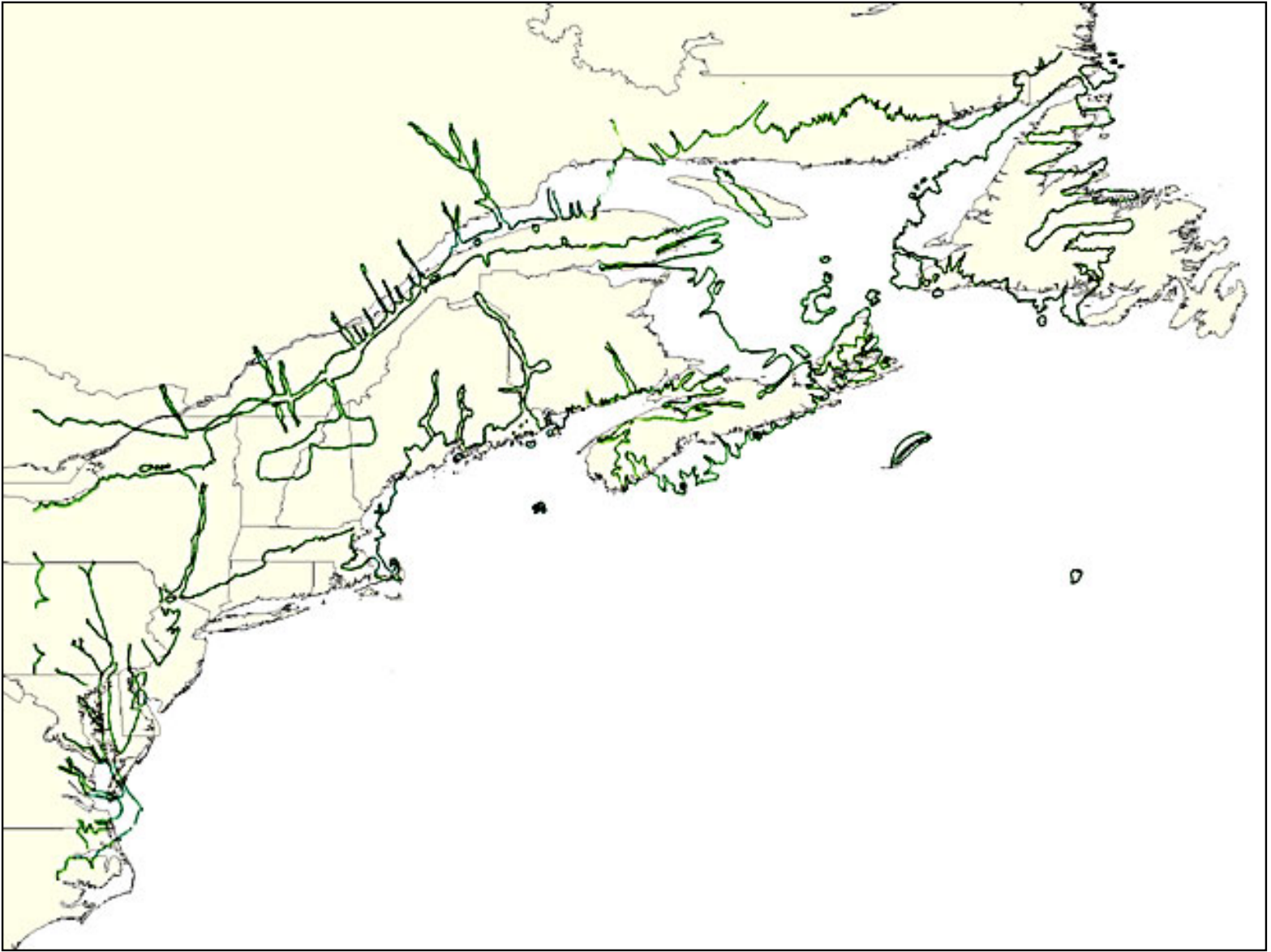


Figure 4. Velasco Map superimposed over a modern map (equirectangular projection)

What conclusions can be drawn from this pattern of displacements? First, the errors in latitude are considerably easier to explain than the errors in longitude. Since the latitudinal readings are fairly accurate when taken off the map grid, the differences in latitude between the two maps could be partially explained by the shorter length of the degree used by the maker of the Velasco Map. The longitudinal errors are more of a puzzle. The pattern of longitudinal displacements varies throughout the map, but the relative accuracy of longitudes remains one of the map's most improbable features. Many of the longitudinal displacements are the result of a marked underestimation of the distance between the east coast of the continent and the St. Lawrence River; others derive from the underestimation of the length of the St. Lawrence River itself. The scale in various parts of the map is also either stretched or compressed. All of this confirms that the remarkably accurate longitude estimates based on the grid of the map, as well as the accurate distance measurements across wide areas of the map, are mostly the result of astonishing coincidence and good luck, unless they were supplied by a forger with modern

information. Furthermore, the errors in longitude and latitude fall into several broad groups with distinct patterns: Newfoundland and Anticosti Island, the east coast of North America between Nova Scotia and Northern Cape Cod, the area between Buzzard's Bay and Cape Lookout, and the western part of the Gulf of St. Lawrence along with the St. Lawrence River Valley. If the map is realigned and rotated differently, each of these areas can be made to line up much more closely with the modern map. These groupings could correspond to different sources (or groups of related sources) used to compile the map. These patterns of displacement and errors in scaling are what one might expect to find on an early seventeenth-century map of the area. Thus, if the Velasco Map is a forgery, it faked many apparent errors in compilation that one might expect to find on a map of that time.

We can refine these observations by comparing the Velasco Map with Champlain's 1612 map of New France (which was printed in 1613, but was not actually made available to the public until 1614), and which covers approximately the same area.[\[30\]](#) An unpublished version of this Champlain map would have almost certainly been one of the sources used to compile the Velasco Map, assuming once again that it is authentic. Champlain's map of 1612 was the most accurate of his small-scale maps, and was much better than any other map of the area available around 1610. Figure 5 shows these two maps superimposed on top a modern map with the scales of the maps being adjusted, and the images displaced vertically and horizontally to make the shorelines along the Atlantic coast line up. The Champlain map, which was not oriented to true north, has also been rotated slightly to give it the same orientation as the other two maps. The three maps are again calibrated so that they coincide at the northern tip of Cape Cod, which lies near the center of the maps, but no "stretching" or other form of areal distortion was applied. The resulting image is somewhat confusing, and is best viewed in conjunction with the photographs of the maps reproduced above.

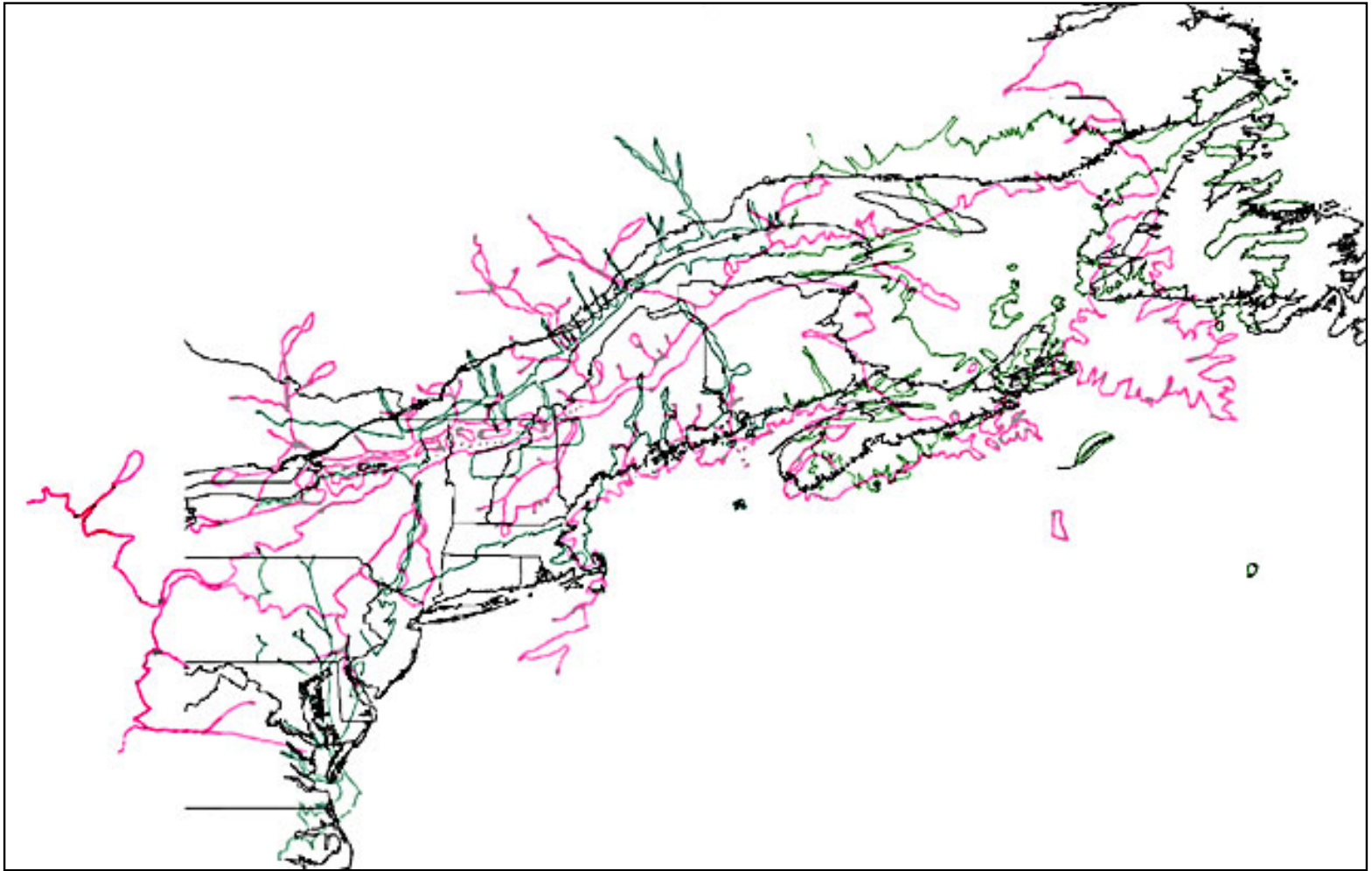


Figure 5. Outlines of the Velasco Map (green) and Champlain's 1612 map of New France (pink) superimposed on a modern map.

The most obvious thing that emerges from Figure 5 is that the Velasco Map was clearly influenced by the Champlain map, although the similarity does not extend to all areas. The three maps line up quite well between the northern tip of Cape Cod and the end of the Bay of Fundy. Champlain's coastline comes closer to the modern map along the coast of Massachusetts and southern Maine than does the Velasco Map, but the rendition of the coastline north of Penobscot Bay is considerably more accurate on the Velasco Map, which is surprising considering that Champlain surveyed that area, but the English did not. Also, the Velasco Map does a better job of capturing the trend of the St. Lawrence River, although Champlain's rendition could be made to come closer by rotating the map differently (thereby throwing the New England coast out of alignment). The rotation of Newfoundland and Anticosti Island, as well as the dramatic eastward displacement of the west coast of the Gulf of Saint Lawrence, were almost certainly copied by the author of the Velasco Map from Champlain's map of 1612. In almost all other areas, the longitude and latitude coordinates on the Velasco Map are closer to the modern values than they are on Champlain's map. This is particularly noticeable around Newfoundland and Cape Breton Island, but there is also much less displacement of inland areas to the south and the east than on the Champlain's map. The two maps cannot be compared in the area south of Cape Cod, since Champlain made only a weak attempt to depict a small portion of this region. As we have seen, the Velasco Map does a creditable job of delineating the southern portion of the coast, although it is compressed and most of it is displaced somewhat to the north or the west. Champlain's map places the St. Lawrence River and Lake Champlain even closer to the coast of New England than does the Velasco Map. In general, the outlines of the Velasco Map are intermediate between

Champlain's map and a modern map. In fact, I am not aware of any map produced prior to 1750 that captures the overall trend of the coastline over this entire as well as the Velasco Map. Thus returns the disturbing question: is it credible that such a map could have been produced in 1610?

A Map of Many Colors

The Velasco Map is notable for its aesthetically pleasing and imaginative use of color. Coastlines, as well as the banks of rivers and lakes, are outlined in a variety of colors, in a complex scheme, which will be presented below. Islands seem to be colored at random, and in places constitute a colorful confetti of yellow, reddish-brown, green, and lilac. Although it is difficult to judge the nature of the pigments from photographs, they appear to be a mixture of watercolor wash, colored inks, and some other pigments that catch the grain of the paper, such as pencil or crayon.

The only direct explanation on the map itself concerning the meaning of these colors is the statement "all the blue is done by the relations of the Indians." The areas colored blue include the upper reaches of the Susquehanna River and two other rivers flowing into Chesapeake Bay. The blue area near the Chesapeake Bay corresponds with a line of Maltese crosses on John Smith's 1612 map of Virginia, which demarcates the part of Smith's map where the information is derived from Native Americans. Further to the north, the blue areas include Lake Ontario, the Mohawk River, a river that flows into Lake Ontario from the north, lakes George and Champlain, the St. Lawrence River past the Lachine Rapids, and the southern half of the Richelieu River. All of these areas would, indeed, have been unexplored by Europeans in 1610.

At least some of the other colors, as Stokes first pointed out, seem to denote the individual sources or surveys that were used to compile the map. Thus, the area in North Carolina that was surveyed by White and Harriot is colored Green. The area around Chesapeake Bay, surveyed by Smith, is colored yellow. The coast of Delaware, modern New Jersey, and the Hudson River, is colored in a sepia shade, and corresponds to the area explored by Hudson. As Stokes also pointed out, the area that seems to correspond with the southern coast of Long Island, which was not explored by Hudson, is colored brown. This area, according to Stokes, must have been explored by an unrecorded English voyage shortly after Hudson's return.[\[31\]](#)

North of this area, the meaning of the colors, if any, becomes much less clear. The area along the South Shore of Cape Cod and around Buzzard's Bay is colored reddish-brown. This may correspond to a particular exploration, possibly Gosnold's voyage of 1602. The coast of New England from Cape Cod to near the Kennebec River is colored yellow. The Kennebec River and the coast nearby is colored green. (Here and on other places on the map major islands are colored dark yellow to set them off from the mainland.) What may be the St. George River (labeled Tahanock on the map) is colored reddish brown. These colored rivers may also represent the results of particular English expeditions between 1600 and 1610.[\[32\]](#) The remainder of the coast from Penobscot Bay north—including New Brunswick, Nova Scotia, and the shores of the Gulf of St. Lawrence—is colored yellow, as is the north shore of the Bay of St. Lawrence. This whole area was claimed by the French, but there is no indication of "New France" anywhere on the map, and this large area does not appear to correspond to any specific political claims, or to any particular expedition or exploration. The north shore of the St. Lawrence River and the rivers emptying into it are colored green. The south shore of the St. Lawrence and its tributaries are colored reddish-brown. This whole area was explored and claimed by the French, and the two banks of the river were certainly not explored separately. Perhaps—just perhaps—an effort is being made here to limit the French claims to the north shore of the St. Lawrence. Finally, Newfoundland is colored green, for no obvious reason, although this color is used for Newfoundland on the Virginia Company Chart and some other contemporary maps.

All in all, it is hard to say what to make out of this unusual color scheme. It may provide some support for the authenticity of the Velasco Map, since it is hard to say what a forger might have had in mind in using these colors. However, in spite of the observations of Stokes, it is equally difficult to explain these colors as representing (over the entire map) records of particular explorations, and thus account for the way they might have been used by a seventeenth-century map maker, although somewhat similar color schemes were occasionally used on early seventeenth-century maps. Similar, although less elaborate, uses of color can be found on the Virginia Company Chart, as well as on the 1608 Tindall Map of Virginia, and on Baffin's chart of his passage through Hudson Strait in 1615.[\[33\]](#)

Detailed Analysis of Names and Features of Specific Regions

The way in which individual regions are depicted on the Velasco Map should provide us with important clues concerning the sources used in its construction. In addition, we can learn much by comparing the place names on the Velasco Map with those found on other maps produced about the same time. The Velasco Map offers plenty of material for the analysis of geographic names. I count 246 place names on the map. Most of these can also be found on a variety of sources, ranging from sixteenth-century maps based on the voyages of Verrazano and Cartier, to Henry Briggs' 1625 map of North America. Some of the names I have been unable to identify on any other map, and a few may be imaginary. Strikingly missing from this list of names are regional names reflecting European colonial claims to parts of North America, such as "Virginia" or "New France." In an age of nascent European imperialism, this is another strange anomaly on the Velasco Map.

Proceeding roughly from south to north, let us take a closer look at the depiction of individual regions on the Velasco Map.

North Carolina and Virginia

As one would expect from a map supposedly associated with the Virginia Company, it is most detailed in the area around Chesapeake Bay and coastal North Carolina. It is also relatively easy to trace the sources for the information on this part of the map. The southernmost section, which covers the coastal areas of North Carolina, is colored green, and was, as Brown correctly observed, "evidently taken, chiefly, from Captain John White's survey and drawings."[\[34\]](#) The area around Chesapeake Bay (colored yellow) bears a close resemblance to John Smith's 1612 map of Virginia. In both of these areas, the Velasco Map gives the general impression of being a reasonably accurate, but less careful and detailed, rendition of the published maps of White and Smith. That said, the connections between the Velasco Map and these related maps are more problematic than they appear to be at first glance.

The part of the map dealing with coastal North Carolina is one of the few sections of the Velasco Map that was clearly derived, at least in large part, from a map published prior to 1610. Two versions of John White's map of Virginia were consulted for this article: a copy of the manuscript map of 1685, which is now at the British Library, and the version published by De Bry in 1690.[\[35\]](#) Both versions closely resemble each other, and both are at a larger scale and are more detailed than the Velasco Map. There are some place names on the De Bry version of the White map that do not appear on the earlier version, and several of these also appear on the Velasco Map. However, there is a considerable difference in nomenclature between the Velasco Map and both of White's Virginia maps. There are many more names, particularly of Indian tribes, on White's maps than on the Velasco Map. There are nonetheless a significant number of names that apparently represent Native American settlements on the Velasco Map. A few of them definitely appear on one or the other of the White maps; others may represent places shown on the White maps, but the spelling is so different that it is difficult to ascertain what they signify or

where they came from. Leaving aside the more obscure Indian villages, several variants of well-known names appear on all three maps, including Roanoke Island, Trinity Harbor, and Secotan. However, there are also a surprising number of names on the Velasco Map that do not appear on White's maps. These range from the well-known "C. Feare" to such oddities as Endesohe. Thus, at least as far as place names are concerned, sources in addition to White were used by the author of the Velasco Map.

The relationship between the Velasco Map and Smith's 1612 map of Virginia is stronger and more direct.^[36] The two maps resemble each other very closely in such matters as the outline of the coast, the location of islands, and the courses of rivers. Their nomenclature is also almost identical. There are some 68 place names on this part of the Velasco Map, most of which represent Native American settlements. All except a very small number of names are the same as, or close variants of, names that appear on the Smith map. The most interesting exceptions are the names of the four major rivers flowing into Chesapeake Bay. Here Velasco's "The Kings River" (modern James River) is called the "Powhatan flu" by Smith; "The Prince's River" (now York River) is called "Pamanuk flu" by Smith; "The Queenes River" (Rappahanock River today) is Smith's "Tappahaneck flu"; and Velasco's "Elizabeth River" (now the Potomac) is Smith's "Patauremeck flu." Another indication of the close relationship between the two maps is the similar way in which both depict areas known only through information received from the Indians. As mentioned above, on the Smith map, a line of Maltese crosses marks the upper courses of the major rivers, beyond which "is by relation" of the Indians. These same river sections are colored blue on the Velasco Map, which color is used to depict areas "dune by relations of the Indians." More will be said below about the use of information provided by American Natives on the Velasco Map. All of this suggests that this part of the Velasco Map was based on an early unpublished draft of Smith's map of Virginia, which would be quite possible if the map was made in London by a Jacobean cartographer. The close relationship between the Velasco Map and Smith's map of Virginia could, of course, also easily be explained if the Velasco Map was forged long after 1612.

New York Region

The area from the coast of Delaware to New York Harbor, along with the Hudson River, is tinted a distinctive reddish or sepia color, and corresponds to the area explored by Henry Hudson on his third voyage of discovery.

Stokes conducted a careful analysis of this portion of the map. He maintained that: "This whole stretch, which is shown with much accuracy of detail, does not appear on any earlier map, and there can be no reasonable doubt that it represents the results of Hudson's discoveries, agreeing, as it does, in every essential particular, with the journal of Juet...."^[37] Stokes devotes a good deal of space to describing individual features that correspond exactly to Juet's descriptions. This journal is now the most detailed source available for Hudson's voyage, since Hudson's log and the maps he almost certainly made have been lost. Hudson's lost papers were seized by the English when his ship was detained on its return, and they would have been available to the maker of the Velasco Map, assuming the map is indeed authentic. The correspondence with Juet does not, however, prove very much about the authenticity of the map. A forger would also have had access to Juet's journal, and it is not unusual for forged maps to be based on written descriptions like this.

There are only two place names on this portion of the Velasco Map: "Manahata" and "Manahatin." These names are drawn on opposite banks of the Hudson River, next to some green-colored hills, which possibly represent the Hudson Highlands. These names appear to be too far north to represent Manhattan, which is not shown as an island separate from the mainland.

Several other features on the map in present-day New York State fall outside of the area directly explored by

Hudson. One is Long Island. At first glance, the Velasco Map seems to omit Long Island, which is what one would expect, since Hudson's course did not take him to the east of New York Harbor, and Long Island was not portrayed as an island until the "Adriaen Block Chart" was completed in 1614. However, as Stokes correctly pointed out, the Velasco Map does seem to show the south shore of Long Island, and the coastline drops off to the north at a point coinciding with the east end of the island. The Long Island area is shown in a dark brown color, which is distinct from the color used for the area explored by Hudson, although it is easy to overlook the color difference in photographs. This portrayal of Long Island led Stokes to speculate that it resulted from another undocumented English voyage to the vicinity of New York harbor. This is entirely possible, although the proliferation of lost maps and undocumented voyages in connection with the Velasco Map does begin to strain one's credulity after a while.

Another anomalous feature of this section of the Velasco Map is the Mohawk River, which is colored in blue and shown flowing from the Hudson River into Lake Ontario. Hudson does not appear to have gone quite as far north as the Mohawk River, and that river is colored in blue to indicate that this information comes from Indian informants. It is quite conceivable that Hudson could have obtained this information from Indians in the vicinity of present-day Albany. Although the Mohawk River does not flow directly into Lake Ontario, Natives frequently followed this route in their canoes, with the aid of a portage from the Mohawk River to a creek flowing into Lake Oneida. The trouble with this hypothesis is that this route does not appear on any other European maps prior to the middle of the seventeenth century. Both the Dutch and the French had only the vaguest ideas about the geography of the region between the Hudson River and Lake Ontario. Once again, an "advanced" feature of the Velasco Map stands in suspect isolation.

A noteworthy feature in upstate New York, also attributed to information derived from the Indians, is the appearance of Lake George and Lake Champlain, albeit distorted in form and exaggerated in size. Information about these lakes could conceivably have been gathered by Hudson, but since they are shown (correctly) as flowing into the Richelieu River, which leads to the St. Lawrence, this information would almost certainly have come from a French source, and will be discussed in greater detail in connection with the depiction of New France.

New England

The Velasco Map does a reasonably good job of capturing the New England coastline, although it is not (Samuel Adams Drake to the contrary) "far better" than John Smith's 1616 map of New England. The New England coastline is depicted in a succession of maps created between 1607 and 1614, and much can be learned from comparing these maps. There are some similarities between the Velasco Map and Champlain's maps of 1607 and 1612, and also with the "Adriaen Block Chart" of 1614, but the pattern of influence is not clear. There is a close relationship, as we will see, between the Velasco Map and Champlain's maps northwards from Penobscot Bay, but the southern portion of the New England coast on the Velasco Map is mostly derived from different sources. The rendition of the coast on the Adriaen Block chart seems to be intermediate between the Velasco Map and Champlain's maps, and may in addition make use of unknown Dutch sources. Of these four maps, the Velasco Map most closely resembles Smith's, although Smith's map is more detailed in most respects, and Smith's coastline matches more closely with a modern map. The similarities between the Velasco Map and Smith's map could indicate that one map influenced the other, that they shared common sources, or simply that both reflect fairly careful surveying and exploration. Examining more closely the relationship between these maps would be interesting, but probably would not shed much more light on the question of the Velasco Map's origins and authenticity.

The coastline of New England as shown on the Velasco Map, in contrast to the New York region, has a fair number of place names. A good deal of attention has been paid to the nomenclature of New England on the Velasco Map by Brown, Stokes, and, most recently, David Quinn.^[38] Their examinations have revealed that this section of the map is very much a composite made from several sources. The map is thought to incorporate information from the voyages of Pring, Gosnold, Argall, and Weymouth, as well as from French expeditions and possibly other sources. Several place names make their first cartographic appearance on this section of the map, and several others make their only appearance anywhere.

Moving up the coast of New England from south to north, the Velasco Map begins to carry more detailed place name information beginning with the south shore of Cape Cod. There is no hint of Narragansett Bay, although Block Island is shown and given the Verrazanian name “Cladia” (usually Claudia). “Martheys Viniard” (Martha’s Vineyard) and “Elizabethes Ilse” (Elizabeth Islands) make their first appearance on a map, as does “Penquin” (Penguin) on Cape Cod proper. The name “C. Cod” also appears here on a map for the first time, but it is applied to the southern end of the cape, our Monomoy Point. According to Quinn, all of these names except “Cladia” are derived from Gosnold’s account of 1602. The northern tip of Cape Cod is called “Whitsons hed” and Cape Cod Bay is “Whitsons bay.” These names are derived from Pring’s voyage (1603).

As one moves further north, the nomenclature and sources become more confusing. The names “Sandy Isle,” “C. Porpos,” “Ile Lobster” and “Peninsale” are not on any other maps, according to Quinn, who tries to identify these names with specific locations and observes that they “could have come from any voyage between Gosnold and Hanham.” Quinn adds that “there is a strong suspicion that the river names in Maine come from a lost map compiled on the Hanham-Pring voyage,” but also remarks that many other sources are possible.^[39] There were, in fact, a number of English voyages to the area between Cape Cod and the Penobscot River in the decade prior to 1610, and any of them could have been sources for the New England information on the map. Monhegan Island appears as “I. St. George,” which is probably a name derived from Weymouth’s colonization attempt in 1605. The name “S. Georges Banck” also makes its first appearance on this map.^[40] The bank is considerably misplaced, and to the south of it are four non-existent islands (colored orange, green, and red). If the map is a forgery, its author was well acquainted with the accounts of early English voyages to New England, which were published by Purchas, and the forger might well have added some names and islands of his own devising.

A peculiarity of the nomenclature on this section of the New England coast is that several of the names are written upside down. This is not in itself unusual on old maps, and usually occurs when a mapmaker moves around a table or shifts a map to facilitate writing. However, no such pattern is apparent on the Velasco Map, and these names in the center of the map seem to be arbitrarily singled out for the upside down treatment. This could be an attempt by our hypothetical hoaxer to make the map “look old.”

From Penobscot Bay to the north, French names predominate. Many of the place names are similar to those on Champlain’s unpublished 1607 map of New England. The following are variations of names that appear on Champlain’s map: Iles de Montes Deserts (Champlain, Mont Desert), R. Pemetogat (Champlain, Pentigoet), I Haute (Champlain, Isle haute), and possibly Penduis (Champlain, Isles Perduës). The Velasco Map also includes “Isles Basses,” which does not appear on any other map (although the word “basses” does appear north of the St. Croix River on Champlain’s map of 1607). Another oddity in the Penobscot Bay area is a name that I read as “Isles las Ranges,” which appears to be derived from “Illes rangees” on Champlain’s 1612 map, or from “Isles range” on his 1607 map. Several of these names are significantly displaced from their location on Champlain’s maps.

New France and Newfoundland

Commentators on the Velasco Map have paid little attention to its depiction of the area north of New England. In this respect, Stokes is typical. He wrote: “The representation of Newfoundland, Labrador, New Brunswick, Nova Scotia, and the St. Lawrence presents no features of particular interest, but reproduces the characteristics of these parts as they were commonly represented at the time.”^[41] Actually, it is precisely this portion of the map (along with the depiction of upstate New York) that raises the most serious questions about its authenticity. Stokes was apparently so focused on his area of primary interest—the region around New York City—that he failed to pay much attention to what is now in Canada.

On both sides of the Bay of Fundy, we can see a continuation of the pattern established in northern Maine. The depiction of the islands and shoreline is similar to, but not the same as, Champlain’s map of 1607. As noted above, his depiction of the coastline of the Bay of Fundy is actually somewhat more accurate than on Champlain’s map of 1612. The author of the Velasco Map was clearly knowledgeable about the French colonization efforts in this area. Much of the nomenclature around the Bay of Fundy resembles that on the Champlain’s 1607 map, but there are significant exceptions. On the Velasco Map, the Bay of Fundy is called “Bay Francosa” (“La Baye françoise” on Champlain’s map); the St. John River, is “R. de St. Jean” (R. St. Jan on Champlain). Velasco has “I. forte” where Champlain has “Isle forte,” “P. Riall” for Champlain’s “por royal,” “B.S. Maria” for “baye St. Marie.” And “B.S. Marguerita” for “P St Margerite.” The use of Spanish versions of several of these names is interesting, and might indicate that the map was copied by someone whose native language was Spanish. The map does not, however, use any of the extensive Spanish nomenclature found on many late sixteenth-century maps of the east coast of North America, and even on Levasseur’s important world map of 1601. There are several other names in this region that may, or may not, be derived from highly distorted versions of Champlain’s names. Near the mouth of the St. Croix River, the Velasco Map has “Ils aux Oiseaux,” where Champlain has “Isle aux perroquetz;” there is a “R. Bouis” in the vicinity of Champlain’s “R. St. luis;” and “Penclae” near where Champlain has “Isle Pedue.” One of the oddest differences is the appearance of “Les Mines” at the mouth of the Bay of Fundy near Digby Neck, where Champlain has “Isle Longue.” Champlain and other French sources place “les mines” near Cap D’Or at the head of the Bay of Fundy. There are also many names on the Champlain map that do not appear on the Velasco Map, and three names on the Velasco Map that do not appear on either Champlain’s map of 1607 or his published map of 1612. Thus, the Velasco Map has “R. de Esehemines” for the St. Croix River. The word “Etechemins” (the name of a group of Algonquian Indians) appears in this general vicinity on Lescarbot’s map of 1609 and on Champlain’s 1632 map; it also appears as the name of the river on Henry Briggs’ 1625 map of North America (discussed below). The Velasco Map also has a “C. Ronde” near the head of the Bay of Fundy, which I have not been able to locate on any map, although it may be a misplaced version of Champlain’s “c. rouge.” The Velasco Map also designates the Annapolis River as “Maniquiboit”—another name I have not been able to find elsewhere.

The same pattern of partial dependence on Champlain’s map of 1607 (or something very similar) continues along the south and east shores of Nova Scotia as far as the Champlain map extends—approximately to Port Mouton (“Pt. au Mouton” on the Velasco Map, Port au Mouton on Champlain’s map). Two names in this area are particularly noteworthy. One of these is “Alous marias,” which appears to be a spectacularly mangled phonetic transcription of Champlain’s “Isles aux lou[p]s marins” (modern Seal and Mud Islands). The other is “Ance de Sable,” which I cannot find on any of Champlain’s maps, but which appears on Henry Briggs’ 1625 map of North America.^[42] This is one of 34 close matches I have found between names on the Velasco Map and those on the relatively small-scale Briggs map. This indicates one of two things. Possibly, the person who forged the Velasco Map used the well-known Briggs map as an important source of names, for I cannot find many of these names on other maps. Or else, the two maps are based in part on common sources. Briggs was active professionally at the time the Velasco Map was supposedly made, and both authors would have belonged to the same small circle of

Jacobean court cartographers, which is described below. It is even remotely possible that Briggs was the compiler of the Velasco Map, although, apart from place names, the two maps have little in common.

Only two additional names appear on the northern part of Nova Scotia beyond the reach of Champlain's 1607 map. One of these appears to read: "Isles de les: Tournite," which I have been unable to find on any other map. The other is Caceau (modern Canso, sanceau on Champlain's map of 1612).

Place names on the Velasco Map once again become relatively plentiful when one moves north to Cape Breton Island, Newfoundland, and to the islands and shores of the Gulf of St. Lawrence. Here we are presented with a somewhat different set of problems in analyzing the sources of the map, since much of this area had been relatively well explored by English, French, and other navigators by the end of the first decade of the seventeenth century. Many of the place names in this area can be found on the maps that Champlain produced after 1612, but they can usually also be found on earlier French maps. The bulk of the names that come from Henry Briggs' map are in this area. In addition, the Velasco Map includes a sprinkling of names found on a variety of late sixteenth-century maps, and some that I cannot find elsewhere.

The area around Cape Breton Island includes two strange place names at the eastern end of the Strait of Canso, which I have not been able to find in this area on other maps: I. Ruge and Raha. (However, an I. Ruge appears in Placentia Bay on Mason's 1625 map of Newfoundland, and also nearby on the Velasco Map.) On the opposite side of the strait, the word "passage" appears where Champlain on his 1616 map has "petit passage" ("passage de canceau" on his 1632 map. The names on Cape Breton Island include the commonly found "P. Anglois," "Cape Briton," and "C. St. Lawrence"—as well as the obscure "I. Cormorade" and "Niganes." (the latter of which appears on Champlain's 1632 map).

The depiction of Newfoundland is particularly interesting. In spite of Newfoundland being displaced and misoriented, its delineation is (as is usual with the Velasco Map) more detailed and accurate than anything else produced in the first half of the seventeenth century. Elegantly drafted, with deep indentations on the eastern coast, it compares favorably with John Mason's important map of Newfoundland published in 1625. Some of the place names can be found on other English maps, particularly those of Briggs and Mason, but there is no close correlation between the names on the Velasco Map and any particular source. Some of the nomenclature is French, but relatively few of the names can be found on Champlain's maps. A number of additional place names were located on unlikely sources thanks to the superb index created by Henry Harrisse for his book on the early maps of Newfoundland.[\[43\]](#) Several names I have still been unable to find elsewhere.

In general, the Gulf of St. Lawrence is one of the weaker features of the Velasco Map. The west coast of the gulf is badly displaced, even in comparison with Champlain's 1612 map, which it resembles in this area. As on Champlain's map, Prince Edward Island is shown as much too small. In most of the area around the Gulf of St. Lawrence, the names resemble those on the maps of Champlain and other widely known French sources. Most exceptions are on the north shore of the Gulf, where the majority of names are close to those on Briggs. These include "A co[a]st of Sands," "B. of Sa[l]mons," and "I of Damsels." One of the names in this area that I have not been able to identify on any map is "flatus," which has the appearance of having been mischievously added by a bored cartographer.

The St. Lawrence River and its estuary are delineated on the Velasco Map with remarkable accuracy. The depiction of the course of the river bears considerable resemblance to that on Champlain's 1612 map, but there are also significant differences between the two. The Velasco Map does a better job of capturing some of the headlands and bends in the river, although Champlain did notably better at depicting the curve of the Gaspé

Peninsula.

The area along the St. Lawrence River west of Anticosti Island is of particular interest because it is difficult to make a case that there were lost or not-yet-published English sources that could explain the appearance of this part of the Velasco Map. In the early seventeenth century, English explorers were focusing on Virginia and New England, and left the St. Lawrence Valley area to the French. Certainly, they did not conduct any explorations that could have produced an extensive survey of the area. The author of the Velasco Map would have had available many maps of the area produced prior to 1600. Possibly, he could have somehow obtained copies of an unpublished manuscript survey of the St. Lawrence made by Champlain in 1603, which is probably reflected in his first map of New France (1612). But none of these appear to be the source of the overall delineation of the St. Lawrence River on the Velasco Map.

Nonetheless, this section of the Velasco Map does display some information that could only have come, directly or indirectly, from Champlain. Notable in this respect is the “R. Iroquois,” which is called the “R. des Iroquois” by Lescarbot on his map of 1609 and “R. Iroquois” by Champlain in 1612. (This is the river that leads into Lake Champlain, which later became known as the Richelieu River.) Another example is the Ottawa River, which appears as “R. of the Algonquichings” on the Velasco Map and as “rivière des Algonmequins” on Champlain’s map of 1613.

Several names found on most French maps of the St. Lawrence since the time of Cartier are missing on the Velasco Map, including Quebec and Stadacona. In general, maps of the St. Lawrence area published prior to 1600 do not seem to have been used very much by the author of the Velasco Map. On the other hand, it does include variants of Montreal, Hochelaga, Trois Rivières, Isle of Orleans, and Tadousac, which appear on both Champlain’s maps and on earlier maps. Quite a few of the names are badly corrupted, and it is difficult to trace their origins with certainty. Many are identical or nearly identical with those on the Briggs’ map, including “Franc Roy” (Franco Roy on Briggs), “I. of Filberts (Isle aux Coudres in English),” “I of Hares” (a translation of Ile aux Lièvres), and “R. Came” (R. Carme on Briggs). It is also interesting that neither Briggs nor the Velasco author use Champlain’s “Lac St. Pierre,” but favor the older “The Lake of Angelom” (Velasco) or “The Lake of Angolesme” (Briggs).

Among the most problematic areas on the Velasco Map are the regions adjacent to New France “dune by the relations of the Indians.” The appearance of Lake Champlain and Lake George are among the numerous cartographic “firsts” on the Velasco Map. They are shown (correctly) as connected to the St. Lawrence River by the Richelieu River, which is colored purple for half of its length, and blue (the Indian color) for the portion that flows into Lake Champlain. The overall configuration of lakes Champlain and George are far from the modern one, as well as from that on Champlain’s map of 1612. On the Velasco Map, the two lakes are shown as roughly equal in size and oriented east-west rather than north-south. There is some resemblance between this configuration and that described by Lescarbot in his *History of New France*.^[44] Both of the lakes show the inlets of several small rivers—information also presumably provided by the informative relations of the Indians, and mentioned by Lescarbot. Interestingly, the Velasco Map traces in considerable detail the courses of a number of rivers flowing into the St. Lawrence, especially from the north. In 1610 only the mouths of these rivers had been explored by Europeans, and (in the interest of consistency) they, too, should also have been colored blue.

The most suspect feature on the entire map is probably the depiction of the eastern end of Lake Ontario. The Velasco Map does a much better job of capturing the overall shape and orientation of the east end of the lake than any map made prior to 1650, or even much later. In some respects, it resembles the rendition on Champlain’s map of 1632, although the overall outline of the east end of Lake Ontario is closer to the modern rendition than the

1632 map. The Velasco Map shows several non-existent islands on the south shore of Lake Ontario approximately where Champlain put them, and also (like Champlain) depicts a large river (apparently a conflation of the Rideau and Cataraqui rivers) flowing into the lake from the north. Champlain also shows the Oswego River entering the lake where the Velasco author shows the combined Mohawk and Oswego rivers. The Velasco Map even appears to include the entrance of the Salmon River, which is shown more extensively by Champlain. It should be noted that this portion of Champlain's 1632 map was based in part on Champlain's own explorations, which took place after 1610. Ironically, Champlain's map of 1612—an unpublished version of which might have been available as early as 1610—also shows the lower course of the St. Lawrence River and Lake Ontario, as well as Lake Champlain. The depiction of Lake Ontario on the 1612 map completely depends on information provided by Native American informants, but its depiction of the eastern end of Lake Ontario is quite different from both Champlain's 1632 map and the Velasco Map. An interesting feature of Champlain's 1612 map, which is missing on both his 1632 map and on the Velasco Map, is a detailed rendition of many of the Thousand Islands. It should also be noted that on the Velasco Map the western end of Lake Ontario is left open—suggesting a possible water route to the Pacific. This suggestion is reinforced by traces of a shoreline shown coyly peeking in on the western edge of the map from Lake Ontario as far south as Virginia. Here the map reflects commonly held wishful thinking on the part of both the English and the French, who in the seventeenth century were still looking for an easy route to China through North America.



Figure 6. Three Views of Eastern Lake Ontario:
Velasco (1610), Champlain (1612), Champlain (1632)

Atlantic Ocean

The Velasco Map shows a non-existent “Isle of John Lewis” in the Atlantic to the east of Cape Cod. This is one of the most striking anomalies on the map. I can find no such island on contemporary maps, or in books on phantom islands, or in gazetteers. Is this a self-incriminating clue left by the forger? Hoaxers sometimes like to leave such clues as hints for future researchers. Many such perpetrators are motivated by a psychological desire to gain recognition for their cleverness, which ironically can only be obtained by eventually being unmasked—although preferably not too soon, so that they can have the pleasure of demonstrating their ingenuity by deceiving professional historians for a long period of time.

The depiction of Sable Island (*Ile Sablon*) is more careful and detailed than on most

early seventeenth-century maps. It is usually depicted as a shapeless blob, although Champlain's map of 1612 includes a reasonable approximation of its correct shape. On the Velasco Map, it is depicted correctly as a curved arc, although the curve is facing in the wrong direction. It is shown in two colors (red and orange), with the orange possibly indicating exposed sand.

Conclusions of Sectional Analysis of the Velasco Map

If nothing else, the above analysis shows that the Velasco Map was a carefully made composite. The author drew upon a large range of narratives and maps, most of which were unpublished in 1610. The uncanny accuracy of the map extends to the drawing of many of its individual parts, which are often more detailed and accurate than anything published prior to 1650, or even later. Where there are errors in the delineation of individual features, they are often idiosyncratic, and do not match up with those on known maps. Except for the sections dealing with North Carolina and Virginia, and the portions of the map that resemble those of Champlain, it is difficult to establish which specific sources might have been used to construct the map. Notably, on the parts of the map covering present-day Canada place names are sometimes so corrupted or displaced that one can only guess about their origins. In some cases, the names may be imaginary. All in all, the odd nomenclature provides few clues about the origins of the map. Many of the names certainly give the impression of having been corrupted by having been copied several times over by careless scribes, although the corruptions could also have been introduced by a forger to make the map look authentic. In many other respects, the map stands in isolation from other maps produced in the first decades of the seventeenth century.

The Velasco Map and the Small World of Jacobean Cartography

Any consideration of the Velasco Map should take into account the cartographic environment in which it was produced. The cartographic establishment in Jacobean England was small and tightly knit. It included explorers like Henry Hudson, William Baffin, and John Smith; publicists like Richard Hakluyt and Samuel Purchas; and "mathematical practitioners" like Thomas Harriot, Edward Wright, and Henry Briggs. Members of this group worked closely with one another, and some had close connections with Dutch cartographers, such as Jodocus Hondius, who worked for a period in London. They also had ties with the royal court, and presumably had access to whatever cartographic intelligence English agents were able to glean from abroad.^[45] If the Velasco Map is indeed authentic, the gleanings from French sources were particularly impressive. However, no documentary evidence exists to support the hypothesis that the English had such extensive and detailed knowledge of unpublished French maps.

If the Velasco Map is authentic, it must have come out of this close-knit circle. Since the map was allegedly made for King James I, only a member of this group would have been in the position to assemble a map from such a wide range of unpublished English, French, and possibly other sources. The sources used in this map apparently included many records of English voyages (including Hudson's) that are now lost. This privileged knowledge could explain the similarities between the Velasco Map and later maps,

particularly John Smith's maps of Virginia and New England, Champlain's maps of New France and New England, and the "Adriaen Block Chart." On the other hand, one has to wonder why the Velasco Map is so often more accurate than these and other later maps? Given the intensive exchange of information among members of the Jacobean cartographic community, why did they not produce other maps that resemble the Velasco Map? Why are there no contemporary records of the existence of the Velasco Map? In particular, why is its influence not reflected on John Smith's 1616 map of New England? These questions raise again the possibility that the Velasco Map is a work of synthesis made much later—a clever combination of early seventeenth-century cartographic knowledge set in an essentially modern framework.

Early seventeenth-century English cartographers were able to produce reasonably accurate surveys of limited areas, such as Chesapeake Bay or the New England coast. But they lacked the skills and knowledge to assemble these surveys into a map of an area as large as that covered by the Velasco Map. The efforts of the best French and Dutch cartographers of the time look primitive in comparison with the Velasco Map. Anyone with illusions about the superiority of English cartographic knowledge of the American Northeast should contemplate the John Farrar map of Virginia made in 1651. Farrar, an official of the Virginia Company in England, managed to telescope the coast of Virginia and New England in such a way as to virtually eliminate most of the coast between Delaware Bay and Cape Cod, and he also had the Hudson River flowing directly into the St. Lawrence, and then had these combined rivers flowing into the "West Sea where Sir Frances Drake was 1597."[\[46\]](#)

Conclusions

There is little doubt in my mind that the Velasco Map is a forgery. Although I believe it is a fake, I have been unable to find evidence that proves beyond a doubt that it is counterfeit: there is no "smoking gun" in the form of information that would have been absolutely unavailable to a map maker in 1610. While the configuration of the coastline is so modern in appearance as to make the map appear anachronistic, it is intellectually conceivable (although just barely) that a mapmaker in 1610 could have somehow produced something like this. Nonetheless, the overwhelming bulk of evidence points to the map being a fraud. The most persuasive evidence probably comes from the technical analysis of the map's geodetic framework. There are also several individual features on the map that are more than suspect—most notably the depiction of Lake Ontario and the delineation of the Mohawk River, both of which resemble nothing else produced in the first half of the seventeenth century. The outline of Newfoundland, the "Isle of John Lewis," and some of the oddities in nomenclature are all very suspicious. All in all, there are too many "firsts" on this map, as well as too many features recorded more accurately than on other contemporary maps, for me to believe that the map is authentic. But in the last analysis, it is a judgment call as to whether the map should be accepted at its face value. Based on the preponderance of the evidence (but not beyond all reasonable doubt), I consider it "too good to be true."

If the Velasco Map is almost too good to be true, it must be said that it is also a very good forgery. It could not be merely a misdated seventeenth-century map, since any map

produced after 1620 would have shown Long Island as an island (as does Briggs' map of 1625). Nobody prior to the middle of the nineteenth century would have had the historical knowledge (or the motivation) to make this kind of elaborate map as an historical reconstruction, and the apparent use of Champlain's 1607 map seems to date it to within a few years of its "discovery" in 1888.^[47] The forger must have been an accomplished scholar with plenty of spare time. Whoever made this map had extremely good drafting skills, and was intimately familiar with early seventeenth century geographical knowledge and cartographic techniques. It would have taken an immense amount of scholarly labor to produce this map. In spite of its accurate outline of the coast, the map is full of oddities and errors, both in its depiction of individual features and in its nomenclature. Faking such an impressive suite of errors would have been much more difficult than simply copying an old map and making a few modifications. Since no economic motivation can explain the production of such an elaborate forgery, it must have been made solely for the pleasure of hoaxing other scholars. There would have been only a few people in the decades prior to 1890 with the time, the skills, and the motivation to carry out such a deception.

I hope that, at the very least, I have produced enough evidence to make scholars think twice before accepting this map at its face value. I also hope that this work will stimulate further investigation into the authenticity of the map. More could be done in analyzing the map's place names, and mathematical cartographers could carry out more detailed comparative investigations of the configuration of the Velasco Map and other maps. It is also conceivable that investigators might turn up in the papers of Stokes, Brown, Harriette, or elsewhere some clues pointing to the identity of the possible forger. Finally, and most important, a technical analysis should be carried out on the original map in Simancas. The paper of the map ought to be reexamined, along with its paleography, the constituents of its ink and pigments, and the interactions between the ink and the paper. In an age which does not put much stock in arguments based on historical anachronism, this is probably the only type of investigation that is likely to provide decisive proof concerning the authenticity of the map.

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Notes

1. The map in the Spanish archives is an alleged copy of a putative English original, now lost, drawn prior to or during December 1610, and presented to King James I. The copy now known as the "Velasco Map" was supposedly made for Velasco sometime between

December 1610 and March 1611, and sent by him to Spain. The most detailed color photograph of the Velasco Map is in William P. Cumming, R. A. Skelton, and D. B. Quinn, *The Discovery of North America* (New York: American Heritage Press, 1972), 266-67. A good photo-intaglio copy can also be found in Isaac Newton Phelps Stokes, *The Iconography of Manhattan Island, 1498-1909* (6 vols.; New York: E.H. Dodd, 1915-28), II, C.Pl 22, but the colors appear to have been added by a non-photographic process, and do not exactly represent the original. A black and white reproduction of part of the Stokes photograph can be found in Emerson D. Fite, and Archibald Freeman, *A Book of Old Maps Delineating American History from the Earliest Days down to the Close of the Revolutionary War* (1926; reprint New York: Dover, 1969), 108. The copy in Brown is a hand-drawn facsimile, which should not be used without checking against photographs of the original; it is generally reliable, but contains a few errors, particularly in the transcription of names. See Alexander Brown, *The Genesis of the United States; a Narrative of the Movement in England, 1605-1616, which Resulted in the Plantation of North America by Englishmen, Disclosing the Contest between England and Spain for the Possession of the Soil Now Occupied by the United States of America* (2 vols.; Boston and New York: Houghton Mifflin, 1890), I, Item CLVIII. Copies of the Velasco Map from Stokes and Brown can be found online at <http://www.she-philosopher.com/gallery/1610map.html>.

2. Samuel Adams Drake, "Notes and Queries," *New England Historical and Genealogical Register* 46 (July, 1892): 273.

3. Brown discusses the origins of the Velasco Map in *Genesis*, I, 457-61. See also his reply to Drake in "Notes and Queries," *New England Historical and Genealogical Register* 46 (Oct., 1892): 401-03.

4. Stokes, *Iconography*, II, 51-61, 135-36.

5. Writing in 1926, Fites and Freeman, *A Book of Old Maps*, 109-111, are the last to discuss seriously the possibility that the map might be a forgery.

6. Additional copies of the map can be found in many works, including: Seymour I. Schwartz and Ralph E. Ehrenberg, *The Mapping of America* (New York: Abrams, 1980), 95; Paul E. Cohen and Robert T. Augustyn, *Manhattan in Maps, 1527-1995* (New York: Rizzoli, 1997), 21; Louis R. Gentilcore, C. Grant Head, and Joan Winearles, *Ontario's History in Maps* (Toronto: University of Toronto Press, 1984), 10 (black and white photo); Richard W. Stephenson and Marianne M. McKee, eds., *Virginia in Maps: Four Centuries of Settlement, Growth, and Development* (Richmond: Library of Virginia, 2000) 33 (small color photo).

7. Mark Warhus, *Another America: Native American Maps and the History of Our Land* (New York: St. Martins, 1997), 140; G. Malcolm Lewis, "Indicators of Unacknowledged Assimilations from Amerindian 'Maps' on Euro-American Maps of North America: Some General Principles Arising from a Study of La Verendrye's Composite Map, 1728-29," *Imago Mundi* 38 (1986): 29-30; Barbara Bacus McCorkle, "Cartographic History," in Richard H. Backus and Donald W. Bourne, eds., *Georges Bank* (Cambridge, Mass.: MIT

Press, 1987), 11; Richard F. Whalen, "Where Did Captain Martin Pring Anchor in New England?," *Historical Journal of Massachusetts* 26, no.2 (Summer, 1998): 111-123 (also available online at: http://www.gradewinner.com/p/articles/mi_qa3837/is_199807/ai_n8791090/).

8. Schwartz and Ehrenberg, *The Mapping of America*, 95.

9. This exchange of messages took place in April and May, 2005. These messages are summarized, along with much material from Stokes, by Deborah Taylor-Pearce at: <http://www.she-philosopher.com/gallery/1610mapC1.html>.

10. I am using the terms "fake" and "forgery," as synonymous, although some authors distinguish between the two terms (defining a forgery as a counterfeit copy of an existing map). Following this distinction, the Velasco Map would be, strictly speaking, a possible "fake," since it is not a forged copy of another map. A good introduction to detecting forgeries (mostly of printed maps) is Francis J. Manasek's chapter on "Facsimiles, Forgeries, and Other Copies", in *Collecting Old Maps* (Norwich Vt.: Terra Nova Press, 1998), 73-82.

11. Forgeries of manuscript maps can be quite difficult to detect and disprove without extensive laboratory tests. Even then, as has been seen in the case of the so-called "Vinland Map," these tests can be disputed. For a thoughtful discussion of some possible late nineteenth-century or early twentieth-century forgeries of Italian Renaissance world maps, see David Woodward, "Could These Italian Maps Be Fakes," *The Map Collector* 67 (July 1994): 2-10. For the case of a forged map dealing with seventeenth-century American history, see: Charles T. Gehring. "A Case of Fraud: The Dela Croix Letter and Map of 1634," *New York History* 66, no. 3 (July, 1985): 249-61. Between 1870 and 1920 there appeared a spate of forged documents relating to colonial American history. These forgeries accompanied the revival of interest in colonial history in the decades following the Civil War. Although not concerned directly with maps, Mary-Beth Norton deals with this phenomenon in "Getting to the Source: Hetty Shepard, Dorothy Dudley, and Other Fictional Colonial Women I Have Come to Know Altogether too Well," *Journal of Women's History* 10, no.3 (1998): 141-54.

12. Brown, *Genesis*, I, 43-45, states that "The Simancas papers were procured for me in Spain by the Hon. J.L.M. Curry, LL.D., our late representative there." The papers were translated for him by a Professor Schele De Vere, who commented on the difficulty of translating the old Spanish, and on apparent errors introduced by the copyist. De Vere's comments (quoted by Brown) lead me to think that the papers are probably authentic, but not necessarily the map.

13. Brown, "Notes and Queries," 401.

14. Brown, *Genesis*, I, 455-57.

15. The "Zuñiga Chart" was sent by Don Pedro de Zuñiga to King Phillip III in 1608, and

was also uncovered by Brown. It is an early version of John Smith's map of Virginia. See Brown, *Genesis*, I, 183-189. Robert Tindall's map of Virginia also dates from 1608; it resides at the British Library and is reproduced in Cumming, Skelton, and Quinn, *Discovery of North America*, 237.

16. Stokes, *Iconography*, II, 135 (note).

17. For two examples of real or suspected forgeries made on antique materials, see the previously cited article by Gehring, "A Case of Fraud," and Kirsten A. Seaver, *Maps, Myths, and Men: The Story of the Vinland Map* (Stanford: Stanford University Press, 2004), esp. 168-72.

18. Champlain, Samuel de, *Carte géographique de Nouvelle France*, 1612 (originally published in his *Voyages*, 1613). Copy of a facsimile published by Association of Canadian Map Libraries (1980) is available online at: <http://www4.bnquebec.ca/cargeo/accueil.htm>. Copies of this map have been widely reproduced. Copies of this and the other maps by Champlain referred to in this article can be found in Conrad E. Heidenreich, *Explorations and Mapping of Samuel de Champlain, 1603-1632*, Cartographica Monograph no.17 (Toronto: University of Toronto Press, 1976).

19. Cornelis Doetz and Adriaen Block, [Untitled map of New Netherland known as "The Adrian Block Chart."]. Colored photographs of the original at the State Archives at the Hague in Cohen, *Manhattan in Maps*, 23; Cumming, Skelton, and Quinn, *Discovery of North America*, 265.

20. Anonymous, [Map of the Atlantic Ocean known as "The Virginia Company Chart"], ca. 1608-10. Reproduced by Stokes, *Iconography*, II, Plate C.21A. Reproduced online at: <http://www.she-philosopher.com/gallery/1610mapC1.html>. This small-scale chart, which may be another forgery by the author of the Velasco Map, resembles the Velasco Map in several respects. Stokes discusses this map at some length (*Iconography*, II, 49-50). The Virginia Company Chart was first described in a map dealer's catalog in 1914. It bears a number of stylistic similarities to the Velasco Map, the handwriting is similar, and the two maps share variants of some unusual names. On the Velasco Map, Cape Cod Bay appears as Whitsun's Bay; it is Witstanbay on the Virginia Company Chart. The modern Mud and Seal Islands in Nova Scotia (called Isles aux lou[p]s marins by Champlain) are transformed into "Alous marias" on the Velasco Map, and appear as "Alus Marins" on the Virginia Company Chart. If the Virginia Company Map is not itself a forgery, it constitutes important evidence for the authenticity of the Velasco Map, as Stokes rightly observes. For more on these names, see Appendix C.

21. Henry Briggs, *The North Part of America*, 1625. Reproduced in Cumming, Skelton, & Quinn, *Discovery of North America*, 228; Fite & Freeman, *A Book of Old Maps*, 128.

22. E.G.R. Taylor, *Late Tudor and Early Stuart Geography, 1583-1650* (New York: Octagon Books, 1968), 81. On the various lengths of miles used in seventeenth century England, see Conrad E. Heidenreich, "Measures of Distance Employed on 17th and Early

18th Century Maps of Canada,” *The Canadian Cartographer* 12, no. 2 (December, 1975): 122-28.

23. Heidenreich, *Explorations*, 81.

24. These figures are derived from the length of a degree of latitude and longitude calculator at the website of the National Geospatial-Intelligence Agency (<http://pollux.nss.nima.mil/calc/degree.html>).

25. John P. Snyder, *Flattening the Earth: Two Thousand Years of Map Projections* (Chicago: University of Chicago Press, 1997), 5-8, 56-57; Taylor, *Late Tudor*, 76-82.; E.J. S. Parsons and W.F. Morris, “Edward Wright and His Work,” *Imago Mundi* 3 (1939), 61-71.

26. See Heidenreich, *Explorations*, 68-72, for Champlain’s handling of longitude.

27. Heidenreich, *Explorations*, 52.

28. If the author of the Velasco Map used the modern figure of 69.12 miles for a latitudinal degree as the basis for his calculations, the length of 16 degrees would be 1106 miles. If he was using the early seventeenth-century English figure of 60 statute miles to a degree, the length would be 960 miles. If he was also using 5000 foot “London miles,” the figure would have been reduced to 912 miles. But if he was using the 6000 foot nautical miles adopted after the 1630s, the distance would have been 1094 miles. The actual east-west distance at the latitude of 44 degrees would be $16 \times 49.83 = 797.28$ miles.

29. Heidenreich, e-mail message to author, December 9, 2005.

30. Heidenreich, *Explorations*, esp. 79-83, has made a detailed study of Champlain’s 1612 map. Champlain appears to have used more than one length of league, and consequently portions of his maps are in different scales. These problems are especially acute on his 1632 map, which Champlain somehow based on two different meridians. Champlain’s mostly used the Spanish marine league of 3.45 statute miles, but it practice his “average league” (3.1 miles on his 1612 map and 2.9 miles on his 1632 map).

31. Stokes, *Iconography*, II, 59.

32. Although neither discusses the colors of the New England rivers, both Stokes and Quinn attempt to establish which voyages may have been responsible for the information reflected in specific features of the New England coast shown on the Velasco Map. See Stokes, *Iconography*, II, 52-53; David B. Quinn and Alison M. Quinn, “Maps of New England of the 1606-1610 Period,” Appendix III to *The English New England Voyages, 1602-1608* (London: Hakluyt Society, 1983), 520-527.

33. Stokes, *Iconography*, II, 60, finds similarities in coloring between the Virginia Company Chart and the Velasco Map. The only copies of the Virginia Company Chart that

I have been able to locate are in black and white. The original is part of the Stokes Collection at the New York Public Library. The Tindall and the Baffin maps are reproduced together in Cumming, Skelton and Quinn, *Discovery of North America*, 237.

34. Brown, *Genesis*, I, 458.

35. John White, *La Virginea Pars*, c. 1585. Copy in Cumming, Skelton, & Quinn, *Discovery of North America*, 185; online at: <http://homepages.rootsweb.com/~jmack/algonquin/1585-1.htm>. John White and De Bry. *Americæ pars, nunc Virginia dicta*, 1590. Printed and revised version of previous map. Copy in Cumming, Skelton, & Quinn *Discovery of North America*, 175, and at <http://hdl.loc.gov/loc.gmd/g3880.ct000777>

36. John Smith, *Virginia*, 1612. Available online at: http://www.virtualjamestown.org/jsmap_zoom.html and at: <http://hdl.loc.gov/loc.gmd/g3880.ct000377>

37. Stokes, *Iconography*, II, 53-54.

38. See note 32 above.

39. Quinn, "Maps of New England," 521-22.

40. McCorkle, "Cartographic History," 11.

41. Stokes, *Iconography*, II, 52.

42. Henry Briggs, *The North Part of America* (1625). This map originally appeared in *Purchas His Pilgrimes* (London, 1625). Copies can be found in Cumming, Skelton, & Quinn, *Discovery of North America*, 228, and Fite & Freeman, *A Book of Old Maps*, 128. Available online at: <http://www.henry-davis.com/MAPS/Ren/Ren1/461.html>.

43. Henry Harrisse, *Découverte et Évolution cartographique de Terre-Neuve et des pays circonvoisins, 1497-1501-1769* (1900; Ridgewood, N.J.: Gregg Press, 1968).

44. Marc Lescarbot, *History of New France*, trans. W.L. Grant (Toronto: The Champlain Society, 1907), II, 130.

45. For descriptions of this group, see Taylor, *Late Tudor*, and Parsons and Morris, "Edward Wright and His Work."

46. For the Farrar map of Virginia, see Cumming, Skelton, & Quinn *Discovery of North America*, 268-69.

47. With one exception, the materials mentioned as possible sources of the Velasco Map would have been readily available to scholars anytime after 1850 (although few were available in 1610). The exception is Champlain's manuscript map of 1607. According to

the Library of Congress, Champlain's 1607 map was part of an atlas purchased in 1883 by, the Bibliothèque Nationale in Paris from a monk in Nantes. The chart later came into the possession of Henry Harrisse, who bequeathed it to the Library of Congress in 1915. Thus it is unlikely that the map was forged prior to 1883. For the provenance of Champlain's 1607 map see the "Top Treasures" Web site at the Library of Congress (<http://www.loc.gov/exhibits/treasures/trr009.html>).

APPENDIX A

Latitudes and Longitudes

(The easternmost longitude line on the Velasco Map, which passes through Bell Island off the east coast of Newfoundland, was set by the author to correspond with its modern longitude, and all other longitudes on that map were calculated from that meridian, as explained in the text.)

Cape Lookout: 34.36N x 76.30W (modern); 34.42N x 78.47W (Velasco)

Cape Hatteras: 35.15N x 75.32W (modern); 35.54N x 77.25W (Velasco)

New York Harbor: 40.39N x 74.04W (modern); 40.42N x 76.30W (Velasco)

Cape Cod (northern tip): 42.10N x 70.12W (modern); 41.30N x 71.35 W (Velasco)

Cape Ann: 42.38 x 70.38 (modern); 42.10 x 71.55 (Velasco "Sandy Isle")

Mount Desert Island (southern tip) 44.20 x 68.20 (modern); 44.20 x 67.55 (Velasco)

Cape Sable: 43.23N x 65.37W (modern); 42.48N x 65.15W (Velasco)

Cape Race: 46.39N x 53.00.W (modern); 46.30N x 56.15W (Velasco)

Bell Island: 50.45N x 55.35W (modern); 50.50N x 55.35W (Velasco)

Belle Isle: 52.00N x 55.30W (modern); 52.18N x 55.55W (Velasco)

Cape Gaspé: 48.45N x 64.10W (modern); 48.48N x 63.55W (Velasco)

Tadoussac: 48.09N x 69.43W (modern); 48.48N x 68.50W (Velasco)

Quebec: 46.50N x 71.15W (modern); 47.42N x 70.47W (Velasco) Montreal: 45.30N x 73.36W (modern); 45.12N x 73.50W (Velasco)

Kingston: 44.14N x 76.30W (modern); 44.30N x 76.05W (Velasco)

APPENDIX B**Straight Line Distances (calculated using league of 60 statute miles per degree for Velasco Map).**

Belle Isle (center) to Tadoussac: 682 (modern); 804 (Velasco)

Belle Isle to Kingston: 1175 (modern); 1272 (Velasco)

Belle Isle to Cape Sable: 770 (modern); 840 (Velasco)

Belle Isle to Cape Cod (northern tip): 1025 (modern); 1128 (Velasco)

Belle Isle to Cape Lookout: 1603 (modern); 1680 (Velasco)

Cape Race to Tadoussac: 780 (modern); 732 (Velasco)

Cape Race to Kingston: 1180 (modern); 1152 (Velasco)

Cape Race to Cape Sable: 660 (modern); 576 (Velasco)

Cape Race to Cape Cod (northern tip): 900 (modern); 936 (Velasco)

Cape Race to Cape Lookout: 1500 (modern); 1452 (Velasco)

Cape Gaspé to Tadoussac: 247 (modern); 276 (Velasco)

Cape Gaspé to Kingston: 654 (modern); 732 (Velasco)

Tadoussac to Montreal: 280 (modern); 360 (Velasco)

Montreal to Kingston: 180 (modern); 144 (Velasco)

Mount Desert to Montreal: 292.5 (modern); 336 (Velasco)

Cape Sable to Cape Cod: 254 miles (modern); 360 (Velasco)

Cape Cod to Montreal (northern tip): 320 (modern); 252 (Velasco)

Cape Cod to New York: 228 (modern); 288 (Velasco)

Cape Cod to Cape Henry: 525 (modern); 444 (Velasco)

Cape Cod to Cape Hatteras: 550 (modern); 456 (Velasco)

New York to Cape Hatteras: 400 (modern); 276 (Velasco)

New York to Montreal: 337.12 (modern); 322 (Velasco)

Cape Henry to Montreal: 625 (modern); 540 (Velasco)

Cape Lookout to Kingston: 700 (modern); 588 (Velasco)

APPENDIX C: PLACE NAMES

Names are arranged by regions going from south to north. Where available, the name on the Velasco Map is followed by the modern name and similar names found on other early maps. See the list of maps in Appendix D for an explanation of the abbreviations.

Cape Lookout to Chesapeake Bay

1. C. Feare: Cape Lookout (modern); not on White1585; promontorium tremendum on White-De Bry (1590).
2. Endesohes?: Brown reads Ende Sohes or End Shores? Near Whalebone Inlet? ; not on (White 1585).
3. Uococon?: Brown reads Wococon: Portsmouth I.? (modern); Wococon (White1585).
4. Croatoan: Ocracoke Inlet? (modern); Croatoan (White1585).
5. C. S. John: Cape Hatteras (modern, Brown); not on (White1585).
6. Paquemmok: Piaquiaie (White1585).
7. P. Grimil: Not on (White1585).
8. Chanendgreco?: Not on (White1585).
9. Mentso: Mentso (White1585).
10. Secotan: Indian village; Secotan (White1585).
11. Aguascocal: Aguaseseagoc (White1585).
12. Paquipa: Body of water; Paquippe (White1585).
13. Quapzunga?: Indian village not on White maps?
14. Desamies: Indian Village. Possibly Desemunkepene (White1585).
15. Mesqhapenung: Indian Village. Possibly Masequetue (White1585).
16. C. Kenrick [Near Chicamicomico? Brown]; not on (White1585).
17. Hatarask: Near New Inlet? (Brown); Hatras? (White1585).
18. Po Fernando: Oregon Inlet? (Brown); not on (White1585); mentioned by Ralph Lane (see <http://www.nps.gov/fora/whitede.htm>).
19. Po Lane: Near Nag's Head? (Brown); not on White1585.
20. Croatambig: Croatamung (White1585).
21. Roanoack: Roanoke Island (modern); Roanoack (White1585).
22. Trinitie Harbor: Caffey Inlet? Now closed (Brown); not on White1585; "Trinety harbor" on White-De Bry (1590).
23. C. Henree: Not on (White1585); Cape Henry (Smith 1612).
24. Maranok: Not on (White1585); possibly Mongoack on White-De Bry (1590).
25. Mescachquam: Not on maps by White.
26. Weapeawinem? Possibly Weapemeoc on (White1585).

27. Chepanrock: Not on White1585. (Several Indian Villages on White maps in this area.)
28. Masequohuck: Possibly Masequetuc on (White1585).
29. Pasequonach?: Not on (White1585). Pasquenoke on White-De Bry (1590).
30. Catschking: Possibly Cantaking on White1585

Chesapeake Bay to Delaware River (not numbered on map)

1. Smith Ile: Smith Island (modern); Smiths Iles (Smith1612).
2. Y. C. Charls: Cape Charles (modern); Cape Charles (Smith1612).
3. Aocarnesto?: (Indian village?); Possibly Accobanock (Smith1612).
4. Righonsiug?: (Indian village?). Probably not on Smith1612.
5. Watkins? Point: Watkins Point (modern); Watkins Point (Smith1612).
6. Resararent?: (Indian village?) Probably not on Smith1612.
7. Munforts point: Memferds Pernt (Smith1612).
8. Nantequack (Indian village); Nantaquack (Smith1612).
9. Ruseanock (Indian village?); Ruskaurack (Smith1612).
- 10 Chesepiock Bay: Chesapeake Bay (Smith1612).
11. Tacough: Tochwoh flu: (Smith1612).
12. Ozines: (Indian Village); Ozines (Smith1612).
13. Tesineth: (Indian village); Tesiniah (Smith1612).
14. Peurls Iles?: Pewels Isles (Smith1612).
15. Sasquasahanook: Susquehanna (modern); Sesquesahanoug (Smith1612).
16. Chepowig? (Indian village); probably Cepewig (Smith1612).
17. Quadnaque? (Indian Village); not on Smith1612.
18. Utehowig? (Indian village); Utebowig (Smith1612).
- 19 Attatack (Indian village); probably Attaeck (Smith1612).

48 names of towns and Rivers on Chesapeake Bay (numbered on map)

- a. The Kings River: James River (modern); Powhatan flu (Smith1612).
- b. The Prince's River: York River (modern); Pamaunk flu: (Smith1612).
- c. The Queenes River: Rappahanock River (modern); Tappahaneck flu (Smith1612).
- d. Elizabeth River: Potomac River (modern); Patauremeck flu (Smith1612).
1. Checepiock: Chesapeake (Smith1612).
2. Mattanock: Mattanack (Smith1612).
3. Ile of Hoghes: Hog Ile (Smith 1612).
4. Nandsomand: Nansamund (Smith1612).
5. Warascoyaek: Warraskoyack (Smith1612).
6. Quayonghoohanck: Quiyonghoohanck (Smith1612).
7. Appamatusk: Appamatuck (Smith1612).
8. Masseenacach: Massamacack (Smith1612).
9. Monahassanugh: Monahassanugh (Smith1612).
10. Rossawick; Rassawick (Smith1612).
11. Monasukapanough: Monasukapanough (Smith1612).
12. Powatan: Powhatan (Smith1612).

13. Paspapeigh: Paspapeigh (Smith1612).
14. Jeames towne: Jamestown (modern); James'-towne (Smith1612).
15. Seder Iles: Ceader Ile (Smith1612).
16. Gosnoles Bay: Gosnolds Baye (Smith1612).
17. Kiskiack: Kiskiack (Smith1612).
18. Kecotan: Hampton (modern); Kecoughtan (Smith1612).
19. Orapaks: Orapaks (Smith1612).
20. Cattachipin: Cattachiptico (Smith1612).
21. Raptotank: Rightkethank (Smith1612).
22. Utcustank: Possibly Uttamussak (Smith1612).
23. Muttamussinsack: Muttamussinsack (Smith1612).
24. Mamanassi: Mamanassy (Smith1612).
25. Pozuptank: Poruptanck (Smith1612).
26. Weroroupcocomoco; Werowocomoco (Smith1612).
27. Capawasinck: Capahowasick (Smith1612).
28. Payankatunk: Payankatank (Smith1612).
29. Opiseupank: Opiscopank (Smith1612).
30. Ausenapeugh: Probably Anrenapenah (Smith1612).
31. Socobeck: Seckobeck (Smith1612).
32. Accoqueck: Accoqueck (Smith1612).
33. Cuttatawomea: Cuttatawomen (Smith1612).
34. Tappahanock: Tappahanock (modern); Toppahanock flu (Smith1612).
35. Wighcocomoco: Wighcocomoco (Smith1612).
36. Onoiument; Onawmanent (Smith1612).
37. Patawomeek: Patawomeck (Smith1612).
38. Tauxent: Tauxenent (Smith1612).
39. Acoughtank: possibly Nacotchtanck (Smith1612)
40. Moyaens: Moyaons (Smith1612)
41. Cecowocomo: Cecomocomoco (Smith1612)
42. Wasenacns: Probably Wasinacus (Smith1612)
43. Wasamens: Probably Wosameus (Smith1612)
44. Pautuxent: Patuxent (Smith1612)

New York and New England (south to north)

1. Manahata: (west shore of Hudson).
2. Manahatin: (east shore of Hudson).
3. Cladia [Claudia]: Block Island (modern). From Verrazzano tradition. Found on Wyfliet1597; Clade Ilan (Virginia Company Chart).
4. Elizabethes Ile: Elizabeth Islands (modern); named 1602 by Gosnold (Stokes).
5. Marthays Vinyard: Martha's Vineyard (modern); named 1602 by Gosnold (Stokes).
6. Penguin. Part of Cape Cod. Name from Gosnold ,1602 (Quinn 1994).
7. C. Cod: Monomy Point, south end of cape (modern). Called Cape Cod by Gosnold 1602, Stokes (cites Strachey).
8. Whitsuns Hed: Cape Cod (modern). Used by Pring, 1603, (Fite, Stokes).
9. C. Shole: Cape Cod Shoal (Fite).
10. Whitsun's Bay: Cape Cod Bay (Used by Pring, 1603, Fite, Stokes); Witstanbay

(Virginia Company Chart).

11. Sandy Isle (Brown reads Savidg Iles): Not on other maps. Almost certainly Cape Ann.
12. Isle of Sands: Unidentified. Probably near Portsmouth.
13. A Shoale: Unidentified. Probably near Portsmouth.
14. Peninsale: Not on other maps. Fite and Freeman think it is Cape Ann; Quinn (1983) thinks it is Cape Neddick (I agree).
15. Ile Lobster: Not on any other map. Near Portland Maine. "Appears to be Richmond Island," (Quinn1994). From Hanham? (Quinn, 1983).
16. C. Porpos: Not on other maps. "Is Cape Elizabeth" (Quinn 1994); Cape Porpoise (Fite).
- 17 R. Sagadahok: Kennebec River (Quinn1994); Coined by Weymouth in 1605 (Fite, Stokes).
18. Cinebague: Upper reaches of Kennebec. Ch1607 has Quinibague at mouth of river. (Quinn1994).
19. Tahanock: probably Sheepscot River, but possibly Weymouth's St. George River (Quinn1994). Stokes says it is Weymouth's Pemaquid (1605). Note cross.
20. I. St. George: probably Monhegan Island (modern). From Popham in 1607 (Fite, Stokes). According to McCorkle, Monhegan was named St Georges Island by Weymouth in 1607.
21. I. Penduit: Possibly Sunken Islands (modern); possibly displaced Isles Perdues (Ch1607).
22. Iles Basses. Not on Champlain 1607 or other French maps examined, but in Bay of Fundy on Chaplain1607.
23. I. Haute: Isle au Haut (modern); not on Champlain 1607; Ile haulte (Ch1612).
24. R. Pentegoet (Fite reads Pomerogoit): Penobscot River, Pentegoet (Ch1612).
25. S. Georges Banck: Georges Bank (modern); "a strange feature" islands to south may be a misplaced or duplicated Monhegan (Quinn1994).
26. Iles de Montes Deserts: Mount Desert Island (modern). Name is placed north of Mount Desert Island, which is clearly depicted. Mont Desert (Ch1607); not on Ch1612.
27. Isles las Ranges: Ch1607 has Isles range; Ch1612 has Illes rangees.

Bay of Fundy and Nova Scotia

1. I. Peree: Grand Manan Island (modern); Menane (Champlain). Velasco name not found on other maps.
2. Bay Francosa: Bay of Fundy (modern); La Baye francoise (Ch1607); baye francoise (Ch1612).
3. R. de Esehemines: St. Croix River (modern); Lescarbot1611 has "Etchemins" along coast in this area; Ch1632 has "Etechemins" at headwaters of river; R de Eichemars (Briggs1625).
4. I. Ste Croix: Dochet Island (modern); sentecrois (Ch1607).
5. Ils aux Oiseaux: Near mouth of St. Croix River (possibly modern Machias Seal Island). Champlain 1607 has Isle aux perroquetz in general vicinity.
6. R. de St. Jean: St. John River (modern); R. St Jan (Ch1607); R. de St Iehon (Ch1612).
7. Penclae: Quaco Head? (modern); possibly Isle Pedue (Ch1607); Ile perdue (Ch1612); Pendra (Briggs1625).
8. R. Bouis: Wolfe River? (modern); possibly R. St. luis (Ch1607); R. St. louis (Ch1612).
9. C. Ronde: Possibly Cape Enrage (not on other maps) or Red Head; C Rouge

(Briggs1625); Ch1607 has Isle rouge, and Ch1612 has C. rouge, but both are near modern Red Head.

10. I. Forte: Ile Haute (modern); Isle forte (Ch1607).
11. Maniquiboit: Annapolis River (modern). Name not on other maps.
12. P. Riall: Annapolis Royal (modern); por royal (Ch1607); po royal (Ch1612).
13. B. S Maria: St. Mary Bay (modern); baye St. Marie (Ch1607, Ch1632).
14. B.S. Marguerita: Weymouth Harbiur (modern); P St. Margerite (Ch1607); not on Ch1612.
15. Les Mines: Long Island (modern); Isle longue (Ch1607); illes longue (Ch1612).
16. Ance de Sable: Not on Champlain's maps; Ance de Sablon (Briggs1625).
17. B. Curante: Wedgeport Bay (modern); Baye courante (Ch1607).
18. I. aux Oisiaus: Probably Tusket Islands (modern); Isle aux margos (Ch1607).
19. Alous marias: Seal and Mud Islands (modern); Isles aux lous marins (Ch1607, Ch1612); Alus Marins (Virginia Company Chart).
20. C. de Sable: Cape Sable (modern); cap de sable (Ch1607).
21. Poit: Not on other maps.
22. C. Negre: Cape Negro (modern); cap negre (Ch1607, Ch1612)
23. Batues: Three small islands shown on Ch1607, but not labeled on any of his maps.
24. I. Ronde: Little Hope Island (modern); Isle ronde (Ch1607).
25. C. de la Hene: LaHave (modern); C de la Heue (Lescarbot1609); C. de la heue on Ch1616 and Ch1632.
26. Pt. au Mouton: Port Mouton (modern); Port au Mouton (Ch1607).
27. Isles de les: Tournite? Near modern Lahave. Possibly Isle des Martires on Ch1632.
28. Caceau: Canso (modern); sanceau (Ch1612); Canceau on Ch1632.

Atlantic Ocean

1. Ile Sablon: Sable Island. On most maps of region.
2. The Isle of John Lewis (or Lewin?): Not on any other map.

Cape Breton Island and Bay of St. Lawrence

1. I. Ruge: Unidentified. East of Strait of Canso.
2. Racha: Unidentified. East of Strait of Canso.
3. P. Anglois: P. Anglois (Briggs1625); Port aux Anglois (Ch1632); many others.
4. Cape Briton: c. Breton (Ch1612); C. Britten (Briggs1625); many others.
5. I Cormorade: I. Comerado (Briggs1625).
6. Niganes: Unidentified. Niganes (Ch1632).
7. C. St. Lawrence: C. St. Laurence (Briggs1625).
8. I. St. Poll: St. Paul I. (modern); y. S. Paul (Levasseur1601); St. Poll (Briggs1625); Ile St Paule (Mason1625).
9. I. Anmarges: Ile aus Tanguex (Ch1612); Y. Margaux (Levasseur1601).
- 10 I. Brion: Brion Island (part of Magdalen Islands); I. Brion (Levasseur1601 and earlier maps); I. brion (Ch1612).
11. I. Rameu?. Magdalene Islands (modern); (Visited by George Drake in 1593, Fite); illes ramees (Ch1612); Rama (Briggs1625); Ile Ramea (Mason1625).
12. I. St. John: Prince Edward Island (modern); Ile St. jean (Ch1612).

13. Passage: Strait of Canso (modern); Petit passage (Ch1616); Passage de Canceau (Ch1632).
14. Bay Chaleur. Chaleur Bay (modern); Baye de Chaleur (Ch1613); many others.
15. I Bonaventura: Bonaventure I. (modern); bonnauanture (Ch1612); many others.
16. I Perce: Percé (modern); ille persee (Ch1612); many others.
17. I. Plate?: Possibly Flat I.
18. Gaspay: Cape Gaspé (modern); gaspay (Ch1612); C de gaspay (Ch1616).
19. Ile Ascention: Anticosti Island (modern); I. Ascention (Briggs1625).
20. A cost of Sands: A Coast of Sandes (Briggs1625).
21. B. of Samons: B. of Salmons (Briggs1625).
22. C. Tiernot: Cap Tiennot (Lescarbot1609); C Tiemot (Briggs1625).
23. Bay Boues: B. Boais (Briggs1625).
24. I of Damsels: Y de Damoiselles (Wyfliet1597); I damsels (Briggs1625).
25. Brest: Brest (Levasseur1601); Port de Brest (Lescarbot1611); Brest (Briggs1625).
26. Lanzadoit?: Lancarone (Briggs1625).
27. Flatus: Not on other maps. Near Old Fort Bay.
28. I. of Berets? Note: this and following two entries appear to be placed at modern Bonne Esperance Hrb./Old Fort Bay.
29. Balsana: B. Balsano (Briggs1625).
30. I. Blanch Sablon: Blanc Sablon (modern); blansablon (Levasseur1601); Port de Blanc-sablon (Lescarbot1609).
31. The Gran Bay : Straight of Belle Isle (modern); la grande baye (Ch1613); Gran Bay (Briggs1625).

Newfoundland and Adjacent Islands (arranged clockwise starting with Belle Isle)

1. Belle Ile: Belle Isle (modern). Many early maps.
2. C. Gratie: c degrot (Levasseur1601); c de grat (Ch1612); C de Grote (Mason1625).
3. C. Blank: C.blanc or C. Blanco on some sixteenth-century maps (Harrisse, Terre-Neuve).
4. Ilo Facho: Fico de Fogo (Wyfliet1597); I fichet (Ch1612).
5. S. Lucia: Appears to be modern Groai Island. Name does not appear on other maps.
6. Belle Ile [no. 2]: Bell I. (modern); Belle Ille on Levasseur1601, Ch1612).
7. Groy: Groai I. (modern, but misplaced); Groie (Levasseur1601); goye (Ch1612); Groy (Briggs1625).
8. Mayo: Possibly Horse Islands (modern); May (Briggs1625).
9. Cangoeros: Cogges: (Briggs1625).
10. Ile of Birds: I. of Berts (Briggs1625); Penguin Ins (Mason1625).
11. Firrlines: y. Firrlina (Levasseur1601); Ferluices (Briggs1625).
12. C. Bonavista: Cape Bonavista (modern); Bonne Viste (Levasseur1601); C. St. Jean (Ch1612); Bonavista (Briggs1625).
13. Baculao: Baccalieu I. (modern); (Bacalaus on Levasseur1601).
14. B. of Consumtion: conception (Levasseur1601); B. Corcanapjion on Briggs1625.
15. C. Francise: C St. Francis (modern); S. francoise (Levasseur1601); C. St. Francis (Mason1625).
16. Contalion: Contalions on 1580 map by Joan Martines (see Harrisse, Terre-Neuve, 257-58).

17. S. Ionea?: Probably I S. Iohn (or Joan) on several sixteenth-century maps.
18. B of Bules: I. of Bulls (Briggs1625); B: of Bulls (Mason1625).
19. Ferrialonis: Ferriland (Mason1625).
20. I. de Esporo: Y. da espera on map of John Dee (see HARRISSE, Terre-Neuve, 302)
21. Agosorta?: Agoforte (Briggs1625).
22. Formese: Foritlon (Levasseur1601); Formosa (Mason1625).
23. C. Razo. Cape Race (modern); C. de raze (Ch16); c. race Levasseur1601; C Race (Briggs1625).
24. I. Ruga: possibly Merasheen Island; C. S. Marie (Levasseur1601); I. Ruge (Mason1625).
25. B. of Portinglal?: Placentia Bay (modern); Plaisance (Levasseur1601); B. Portugal (Briggs1625).
26. Penmarque: Pesmarcq at this location on 1689 Basque map (HARRISSE, Terre-Neuve, 324-25).
27. S Laurene: Cape St. Lawrence (modern); C St Laurence (Mason1625)
28. Terra England: Possibly displaced Miquelon Island; Terra England (Briggs1625).
29. I.S. Petri: Possibly displaced St. Pierre Island (modern); I St Peter (Mason1625).
30. Columbero: Possibly Cape Caramello on Harlian world map (see HARRISSE, Terre-Neuve, 209-10).
31. Cape Ray: shown as an island, modern Cape Ray; (C. raye on Levasseur 1601); C Ray (Mason1625).
32. J.C. & ? St. Georgh: St. George's Bay (modern) and on several early maps.
33. Mechique?: Possibly Bay of Islands (modern). Unable to identify on early maps.
34. Ils Vanicns?: Possibly Bay of Islands (modern). Unable to identify on early maps.

St. Lawrence River Area (Names are numbered 1-20 going from west to east on north bank of River, 21-27 going from east to west on south bank.)

1. S. [Second] Saults or Faules: Lachine Rapids (modern); shown in various ways on many early maps.
2. A R. [iver] of the Algumichings: Ottawa River (modern); rivière des Algoimequins (Ch1613).
3. Mount Riall: Montreal (modern); Monereal (Hondius 1606); Montreal (Ch1612).
4. Hochelaga: Indian village near Montreal. Found on Levasseur1601, Ch1612 and many other early maps.
5. The Lake of Angelom: Lake St. Pierre since Champlain; Lac et Isles d'Angoulesme on Thevet1575 and on Wyfliet1597; the Lake of Angolesme (Briggs1625).
6. Les Tros Riviers: Three Rivers (modern); 3 rivières (Levasseur1601); les trios Rivieres (Ch1612).
7. Hochelaya: Indian village east of Monteval; Hochelay (Levasseur1601) and many sixteenth-century maps.
8. Santa Croix: Pointe Platon (modern); P.S. Croix on north bank (Levasseur1601) and Lescarbot1609. Sainte Croix on south bank in same general area on Ch1613.
9. R. Ionas?: Probably Ste. Anne River (modern); R. de genes (Ch1612); R. de St. Jean on Briggs1625, but on south bank (St. John River).
- 10 Franc Roy: Unidentified; Franco Roy on Briggs1625.
- 11 R. [iver of] Canada: St. Charles River (modern); appears at this location on Ch1612;

name also appears in large letters on St. Lawrence River. At this location on Wyfliet1597, Briggs1625 and others.

12. I. [Isle] Orlande: Isle d'Orleans (modern); on many maps; this spelling on Briggs1625.

13. I. of Filberts: Isle of Coudres (modern); I. of Filberts (Briggs1625).

14. I. of Hares: Ile aux Lièvres (modern); I le du Lièvre (Lescarbot1609); I. of Hares (Briggs1625).

15. Tadousea: Tadousac (modern); appears on many maps including Ch1612.

16. I. Raquet (or Raquel?): Possibly modern Pénisule de Manicouagan; I. Raquell on Briggs1625.

17. R. Came: R. Carme on Briggs1625.

18. C. [Cape] Coniger: Point-des Monts (modern); C Comger on Briggs1625.

19. B. Almincan: Probably baie des Sept Iles (modern); his name not on other maps.

20. .7. Ilhas: Les Sept. Ysles on Wyfliet1597, Jode1593, Levasseur1601. (**Names on north bank continue above under Cape Breton Island and Bay of St. Lawrence.**)

21. Les Mons Notedam: Modern name? On many early maps. Levasseur1601, Ch1612: Les Mons de Nostre Dame.

22. Mlabania?: Mantane River (modern); Riviere de Mantane (Lescarbot1611) montonne (Ch1612); Matane (Ch1616).

23. Armondies?: Possibly Ile St. Barnabé (modern); I. St barnabe (Ch1612).

24. St. John Islets: Islands opposite Tadoussac; Islas de St. Joan on Doetichum1594; Les ileaux saint Iean (Lescarbot1611).

25. R. bok?: Probably Bic (modern); bic (Ch1612); le bic (Ch1613); possibly Roquelay on many early maps.

26. R. Irocois: Richelieu River (modern); R. des Iroquois on Lescarbot1609; R. Iroquois on Ch1612.

27. The first Salt or Fale: Richelieu rapids (modern).

APPENDIX D

Selected Maps with Abbreviations (in Chronological Order)

Mercator1569: Gerardus Mercator, [world map], 1569. Detail showing northeast in Cumming, Skelton, & Quinn, 93

Thevet1575: André Thevet, *quarte partie du monde*, 1575. Available online at: <http://www4.bnquebec.ca/cargeo/accueil.htm>

White1685: John White, *La Virginea Pars*, ca. 1585. Copy in Cumming, Skelton, & Quinn, 185. Online at: <http://homepages.rootsweb.com/~jmack/algongin/1585-1.htm>

White 1590: John White and De Bry, *Americæ pars, nunc Virginia dicta*, 1590. Printed and revised version of previous map. Copy in Cumming, Skelton, & Quinn, 175 and at <http://hdl.loc.gov/loc.gmd/g3880.ct000777>

Jode1593: Cornelius de Jode, *America pars Borealis*, 1593. Available online at: <http://www4.bnquebec.ca/cargeo/accueil.htm>

Doetichum1594: Jan van Doetichum, *Nova Francia*, 1594. Available online at: <http://www4.bnquebec.ca/cargeo/accueil.htm>

Wyfliet1597a: Conelius van Wyfliet, *Nova Francia et Canada*, 1597; Trudel, pl. 27. Available online at: <http://www4.bnquebec.ca/cargeo/accueil.htm>

Wyfliet1597b: Conelius van Wyfliet, *Norumbega et Virginia*, 1597; *Mapping Boston*, 81. Available online at: <http://www.library.yale.edu/MapColl/virg.jpg>

Wright1599: Edward Wright, *A Chart of the World on Mercator's Projection*, (ca. 1599). Copy in Cumming, Skelton, & Quinn, 224. Available online at http://www.lib.virginia.edu/small/exhibits/lewis_clark/novus_orbis3.html

Levasseur1601: Pierre Levasseur, *Ocean Atlantique*, 1601. Tracing with names in Ganong; copy in Portinaro & Knirsch, 135.

Hondius1606: Jodocus Hondius, *America*, 1606. Available online at: <http://www4.bnquebec.ca/cargeo/accueil.htm>

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